MEDICAL REPOSITORY,

FOR

MAY, JUNE, AND JULY, 1807.

A CASE *of inveterate* HEAD-ACH, *cured by* ARSENIC: *Communicated in a Letter from Dr.* WILLIAM BUEL, *of Sheffield (Massachusetts), to Dr.* MILLER.

ABOUT the first of last August, Miss L. B. an unmarried lady, of about twenty years of age, was placed under my care, on account of severe and inveterate headach, which she had been troubled with for the last six months. Although the pain had, during the whole of that time, been almost incessant, yet it was not generally violent, but was, at times, aggravated to a great degree of severity. She described the pain as affecting the upper and forepart of her head, and not unfrequently it was accompanied by a painful and distressing sensation about the sternum.

The complaint came on without any apparently extraordinary cause; her health not having been previously impaired, and her constitutional stamina not obviously in any way defective. I could not learn that she had laboured under any eruptive or other disease, which, by repulsion, or other misplacement could have affected her health. She had had, about two months before her application to me, a continued fever of several weeks duration, which was by her physician called a *slow fever;* but I could not discover that there was, probably, any connexion between that and the disease I am describing, as the latter appeared to be the same in all its circumstances after the fever as before. The state of her stomach had, from first to last, been in some degree dyspeptic, but she took food with some degree of relish, and her digestive functions were tolerably well performed. Her strength was such as to admit of her riding on horseback eight or ten miles a day; she could indure considerable exercise of any kind, but was much sooner fatigued than when in health.

But the pertinacity with which her disease had resisted a variety of powerful and apparently well adapted remedies was no less remarkable than the obscurity of its cause. She

had been the subject of a long routine of applications without their bearing in any degree on the course of her disease. Venesection, cathartics, emetics, epispatics, and almost every species of evacuant remedy had, by my patient's account, been tried and carried to such length without success, that I was convinced no good was to be expected from a repetition of any thing of the kind. Indeed, in some instances she was convinced that a perseverance in the use of this class of remedies had aggravated her disease. Tonics, as bark, wine, iron, opium, and mercury, had also been tried, as had both the cold and warm bath; electricity likewise, riding on horseback, and other exercise, with little or no good effect.

The case thus circumstanced, I was at a loss to what means to resort for her relief. As she had, during her illness, suffered some degree of amenorrhæa, and her pulse, countenance, and other symptoms being such as to afford some suspicion of chlorotic debility, I put her on the use of a chalybeate, conjoined with aromatics, which she swallowed for about four weeks, in as large quantities as is generally exhibited in any degree of chlorosis. This produced no inconvenience; she gained some strength, acquired a better countenance, and the pain in her head and breast was somewhat, though in a small degree lessened.

Still, however, I considered her disease as continuing to exist. The chalybeate had been sufficiently tried to prove its inefficacy in producing a radical removal of it. My doubts at this time, respecting its cause, were so much increased, that I was necessitated to resort to a practice in some measure empirical. My first experiment was with arsenic. I commenced the exhibition of Fowler's arsenical solution in pretty liberal doses. After taking it two or three days she became indisposed, had feverishness, diminished appetite, and restlessness, which she imputed to having taken cold. Suspicious myself that the arsenic was the cause, I directed her to suspend its use. In a few days her feverishness and other unusual symptoms subsided, and she recommenced the use of the medicine. In two or three days the same symptoms recurred in an increased degree. On the fourth day, a remarkable erysipelas-like inflammation spread over her head, neck, and shoulders, accompanied with intense heat and itching, and considerable tumefaction, particularly about the eyes. Such was the increase of action about these parts, that an emplaster of Pic. Burgund. which had been

applied, inter scapulas, produced complete vesication, followed with superficial ulceration, and as profuse a discharge as usually succeeds a vesication from cantharides. As this new affection obtained, her former disease subsided, and she now, for the first time in six months, was perfectly free from pain in her head and breast. I was now certain that the arsenic, at both times of her using it, had produced the disturbance in the system which she had suffered; and I believed that an eradication of her disease would be the consequence. She ceased using the medicine, and the disagreeable effects of it again gradually subsided. The discharge from the blister, inter scapulas, continued several days, when it also kindly healed. I had some fear that her disease might return after the cessation of that discharge; but nothing of the kind took place, and her restoration was now rapid, and in every respect pleasant.

The facts developed in this case, exhibit the beneficial effects of arsenic in a form of disease, different (so far as my knowledge extends), in some degree, from any in which that valuable medicine has hitherto been used. The manner, if I mistake not, is also somewhat singular. They also afford, I think, a striking and unequivocal instance of that principle in the animal economy, by which a disease is cured by exciting a new morbid action in a different part of the system.

Were this principle more attentively contemplated by physicians, would it not afford a clue to the investigation of the laws of many obscure, and hitherto incurable diseases? Might not more correct theories of them obtain, remedies be more efficaciously applied, and the benefits of the healing art be thereby incalculably extended?

Further Information on GOITRE: *By* LYMAN SPALDING, *M. D. drawn up for the Medical Repository.*

THE publication of Dr. Jonathan Dorr's "Facts concerning Goitre," in the Medical Repository, Hexade ii. vol. iv. p. 141, induced me to inquire relative to that complaint in the town of Chester, in the State of Vermont, where the Doctor says, "I am informed one-half of the females are troubled with goitre." As the result of my investigation, I shall give an extract of a letter from Abraham

Hedge, M. B. a respectable physician and surgeon, now practising in said town of Chester.

"I can learn of only nine cases of goitre that have ever happened in this town since its first settlement; seven of these were females, and two males. There has not been a new case for a number of years past. There are but three persons in Chester who are now affected with it, and these are females. Chester contains about 2000 inhabitants, its waters are pure, and soil fertile; abounding in hills and dales; there are neither mines, minerals, nor lime-stones; the atmosphere is salubrious."

I have the testimony of a number of other respectable physicians, and gentlemen of reputation living in Chester and its vicinity, in confirmation of what Dr. Hedge has said on the subject, as well as my own personal knowledge of the place.

L. SPALDING, M. D.

Chester, March 11, 1807.

DEAR SIR,

IMMEDIATELY after the publication in the Medical Repository, relative to the prevalence of Goitre in this place, by Dr. Jonathan Dorr, Hex. ii. vol. iv. p. 142, I made inquiry relative to that complaint, and the following is the result:—I can learn of only nine cases that have ever happened in this town. Seven of those were females, and two males. There has no new case happened for a number of years, and there are now but three persons in the town with swelled necks; these are females: some that had that disorder formerly are now free from it, without using any means for its cure: there are now about 2000 inhabitants in the town; the water is pure, and the soil fertile; there are no swamps or stagnant waters in the town; there are high hills, of course deep vallies, and the face of the country in this and the adjacent towns is rough and uneven, but no country can boast of purer water, or a more salubrious atmosphere. There are no mines, minerals, nor lime-stone near here. I cannot learn that the disorder is wholly confined either to the hills or vallies, though most of the cases that have happened here are in vallies. As to the cause of the complaint, I am wholly at a loss what to attribute it to. Stagnant water cannot be the cause of it here, nor do I imagine that snow water is, as wells are easily obtained, and but few families use any other than well water. Dr. Dorr's theory respecting cold being the cause, I think

will not bear the test; you, however, are well situated to establish or refute his theory. If cold be the sole cause, you undoubtedly have some cases in Portsmouth, and many in Portland. I am apt to think, however, that there are no cases of it near the salt-water, let the cold be ever so severe, or the water ever so bad, but that it is a disease of interior countries. A circumstance that happened to one of those that had the disorder here, leads me to this conjecture, not recollecting what authors have said relative to this point. A Mrs. Richardson, now living in Medway, Massachusetts, was formerly an inhabitant of this town; she had the goitre bad when she went to Medway, and tarried there a few years, and returned here again cured. On returning, however, the disorder returned worse than ever, and she has again removed to Medway, and is now free from the complaint. Medway is not immediately in the vicinity of salt-water, though, I think, within the reach of a saline atmosphere. Perhaps I am entirely erroneous in my opinion with respect to its being confined to interior countries; if so, you must excuse my ignorance. If, however, I fail in this conjecture, I would propose one other, viz. Whether the goitre does not depend on some vegetable production for its origin? Hemlock, I will say; as there was formerly much of that timber in this town; and from what Dr. Dorr says of Camden, and Sandgate, I think the timber here very similar to those towns. Any person that can answer the following questions would, I think, do a kindness to those who wish to investigate the subject by so doing, viz. Does the goitre ever appear near the sea coast? Is a cold climate absolutely necessary for its production? Is it known but in mountainous countries? Do the aborigines of America contract the complaint? Are the vegetable productions in all countries where the disorder is prevalent, similar? I shall leave the investigation of this subject to you, or any other person that is better informed than myself, and doubt not but much light may be thrown on the subject by ingenious investigators. Dr. Dorr's publication I conceive to be valuable, though he has given (by misinformation), the females in this town more swellings than they are willing to acknowledge; in general, they swell no worse here than in any other town or country, Dr. Littlefield to the contrary notwithstanding.

I have received your bills of mortality regularly every year, for which I thank you, and should be glad to keep up a correspondence. My health is bad; a consumption is

seeking me for its prey; would not a sea voyage afford a prospect of relief? I have but little pain about the thorax, cough very distressing, and considerably emaciated, expectoration generally streaked with blood. I do not think I have a confirmed consumption upon me as yet; my situation has been much as it is now for more than a year; exercise has hitherto been the only means I have used with success; but gentle exercise, such as riding on horseback, or in a carriage, has but little or no effect. Finding it impossible to live without exercise, I have the last winter made it a practice daily to go into a cabinet-maker's shop, and work two or three hours smartly, so as to produce sweating; the labour I practised was principally turning at a lathe. This labour, I think, well calculated to give circulation to the blood; and the curative indications in that complaint, I conceive to be almost wholly to invite the blood from the lungs to the surface; nothing will so effectually do that as labour. But I am now talking to you on a subject which, from your bills of mortality, I must suppose you to be thoroughly acquainted with, and should be glad to receive your opinion as to the best mode of treatment in consumptions. Your's, &c.

ABRAHAM HEDGE.

An ABSTRACT *of a Series of* METEOROLOGICAL OBSERVATIONS, *and of a* HISTORY *of* DISEASES *for the Years* 1803 *and* 1804: *Made at Doughty's-Falls (Berwick), County of York, Maine,* 80 *Miles North-east of Boston. By Dr.* RICHARD HAZELTINE.

[The Thermometer and Barometer were placed in a front entry, nearly facing the east, equally remote from the influence of fire, and the direct rays of the sun. The Thermometer is graduated by lines of two degrees each; the Barometer by inches, and tenths of an inch. No diseases are named but such as occurred at least three times in the month.]

1803.

JAN. Therm. highest 54. lowest 3.* greatest variation 26 warmer.

* On the 30th.

Barom. highest 30.$\frac{1}{2}\frac{1}{0}$. lowest 28.6. greatest variation 0.5$\frac{1}{4}$. lower.

Wind westerly. Weather variable, mostly fair, and in extremes. Ground several times bare, frozen and thawed. Considerable rain. 1 Aur. Bor. Rubeola, Vermes, Odontalgia.

FEB. Therm. highest 54. lowest 11. greatest variation 19 warmer.

Barom. highest 30.2$\frac{1}{2}$. lowest 28.8. greatest variation 0.5 lower.

Wind N. W. and N. E. Weather variable, much rain, nine inches of snow, ground alternately frozen and thawed, and nearly destitute of snow several times; thunder on the 3d. Healthy. Vermes, Odontalgia.

MARCH. Therm. highest 66. lowest 13. greatest variation 22 warmer.

Barom. highest 30.2. lowest 28.7. greatest variation 0.5 lower.

Wind N. W. variable. Fair and pleasant, but little snow or rain. 1 bright Aur. Bor. Thunder on one day. Healthy. Vermes, Tussis, Odontalgia.

APRIL. Therm. highest 70. lowest 33. greatest variation 19 warmer.

Barom. highest 30.1$\frac{1}{2}$. lowest 29.1$\frac{1}{2}$. greatest variation 0.4$\frac{1}{2}$ lower.

Easterly winds. Weather fair and pleasant, ten inches of snow, but little rain; thunder on the 13th. Willows in bloom before the 15th. Very healthy. Odontalgia.

MAY. Therm. highest 76. lowest 36. greatest variation 20 warmer.

Barom. highest 30.1. lowest 29.0. greatest variation 0.5$\frac{1}{2}$ lower.

Wind S. and N. E. Fair and pleasant, much in extremes. No snow on the 1st of the month, but sixteen inches on the 8th. 1 Aur. Bor. Fruit-trees in bloom before the 15th. Healthy. Rubeola, Odontalgia.

JUNE. Therm. highest 87. lowest 48. greatest variation 19 warmer.

Barom. highest 29.8$\frac{1}{2}$. lowest 28.6$\frac{1}{2}$. greatest variation 0.4$\frac{1}{2}$ lower.

Winds variable, chiefly E. and S. Sixteen days fair and pleasant, the rest variable, rather dry. Vegetation promising. Odontalgia, Rubeola, Vermes.

JULY. Therm. highest 90.* lowest 59. greatest variation 18 warmer.

Barom. highest 29.5. lowest 28.6½. greatest variation 0.4½ higher.

Wind easterly. Overcast and rainy sixteen days, a great deal of rain; thunder on ten days. Vegetables were hurt by the rains. More sickly. Odontalgia, Vermes.

AUG. Therm. highest 88. lowest 56. greatest variation 21 warmer.

Barom. highest 29.8. lowest 28.6½. greatest variation 0.5 lower.

Prevailing winds from the W. Weather variable, but little rain. Healthy. Vermes, Pleurodyna, Odontalgia, and frequently intestinal complaints.

SEPT. Therm. highest 76. lowest 45. greatest variation 20 warmer.

Barom. highest 29.8½. lowest 28.8. greatest variation 0.5 lower.

Winds N. W. and S. W. twenty-two days. Fair and pleasant, not much rain; frost on the 18th. Rather sickly, chiefly catarrhal affections, Odontalgia, Vermes, Tussis et Psora.

OCT. Therm. highest 72. lowest 35. greatest variation 21 warmer.

Barom. highest 30.1. lowest 28.7. greatest variation 0.6½ higher.

Winds variable, chiefly from the N. Fair and pleasant; frost and ice on the 9th, some snow. Scarlatina anginosa epidemical, next in frequency were Vermes and Odontalgia.

NOV. Therm. highest 59. lowest 19. greatest variation 22 warmer.

Barom. highest 29.9½. lowest 28.6½. greatest variation 0.6 higher.

Winds N. W. and N. E. twenty-eight days. Overcast, and much rain, some snow. Scarlatina anginosa epidemical, Odontalgia and Vermes. Very windy this month.

* On the 9th.

DEC. Therm. highest 54. lowest 18. greatest variation 18 warmer.

Barom. highest 30.2. lowest 28.8. greatest variation 0.6 higher.

Wind northerly, and violent a few days. Weather very variable, and in extremes; a great deal of rain, not much snow, ground frozen and thawed several times. Scarlatina anginosa declining, Odontalgia, diseases of the chest.

1804.

JAN. Therm. highest 43. lowest 5. greatest variation 23 warmer.

Barom. highest 30.$\frac{1}{16}$. lowest 28.5. greatest variation 0.7 higher and lower.*

Wind northerly. Weather variable, raw, cold and uncomfortable; plenty of snow, some rain. 2 Aur. Bor. Healthy. Odontalgia, Morbi intestinales.

FEB. Therm. highest 44. lowest 4.† greatest variation 24 warmer.

Barom. highest 30.1$\frac{1}{4}$. lowest 28.7. greatest variation 0.4 lower.

Wind N. W. and N. E. Fair, much snow, little rain, steadily cold. 6 Aur. Bor. Psora, Odontalgia, Tussis, Vermes, Obstipationes, coughs and colds very frequent.

MARCH. Therm. highest 52. lowest 7. greatest variation 20 warmer.

Barom. highest 29.7$\frac{1}{4}$. lowest 28.5$\frac{1}{4}$. greatest variation 0.7$\frac{1}{4}$ lower.

Wind N. W. and N. E. Fair, a great deal of rain, ground frozen twenty-six inches deep. Thunder on the 30th. 4 Aur. Bor. Scarlatina anginosa, Odontalgia, Vermes, Psora, Sore throats very frequent.

APRIL. Therm. highest 60. lowest 26. greatest variation 19 warmer.

Barom. highest 29.9$\frac{1}{4}$. lowest 28.6$\frac{1}{4}$. greatest variation 0.4$\frac{1}{4}$ lower.

Wind and weather variable, snow gone on the 11th, people ploughed on the 16th. Storms of rain on the 6th and 22d from the N. E. 1 Aur. Bor.

* Two observations. † On the 15th.

Scarlatina anginosa, Vermes, Psora, Erup. anomalæ.

MAY. Therm. highest 81.* lowest 44. greatest variation 25 warmer.

Barom. highest 29.7¼. lowest 28.7¼. greatest variation 0.5 lower.

Wind southerly. Weather fair and pleasant, plenty of rain, thunder on the 21st. 2 Aur. Bor. Vegetation promising. Scarlatina anginosa, Vermes, Odontalgia, Tussis, Pleurod. Erup. Obstipat. Pertussis, Varicella.

JUNE. Therm. highest 84. lowest 53. greatest variation 18 warmer.

Barom. highest 29.8. lowest 28.8. greatest variation 0.5¼ lower.

Wind E. Weather overcast, but rather dry and cool. Thunder on four days. 1 Aur. Bor. Plenty of strawberries. Ulcuscula oris, Psora, Vermes, Morb. intest. Scroph. Varicella, Sore throats very frequent.

JULY. Therm. highest 86.† lowest 55.‡ greatest variation 22 warmer.

Barom. highest 29.5. lowest 28.6¼. greatest variation 0.6 lower.

Wind westerly. Weather variable and cold, frost on the 19th, thunder four or five days, great crops of fruits, small, of English grain. Great shower on the 30th. Healthy. Vermes, Odontalgia, Pleurodyne, Asthma.

AUG. Therm. highest 84. lowest 53. greatest variation 16 warmer.

Barom. highest 29.8. lowest 28.8. greatest variation 0.3¼ lower.

Wind southerly. Weather dry and cool, frosts on the 23d and 24th, moderate crop of hay, vegetation backward. Healthy. Vermes, Odontalgia. Thunder one day only.

SEPT. Therm. highest 85. lowest 41. greatest variation 21 warmer.

Barom. highest 29.8. lowest 28.7¼. greatest variation 0.4¼ lower.

Wind variable. Fair twenty days, cool and dry, a

* On the 8th. † On the 30th. ‡ On the 19th.

few warm days, ice on the 21st, great frosts on the 24th and 25th, thunder on one day. Healthy. Odontalgia, Vermes. A few days of highly non-electric air.

Oct. Therm. highest 66. lowest 35. greatest variation 19 warmer.

Barom. highest 30.$\frac{1}{10}$. lowest 28.9$\frac{1}{2}$. greatest variation 0.4$\frac{1}{2}$ lower.

Wind northerly. Falling weather, very severe storm on the 9th. 3 Aur. Bor. one very remarkable on the 22d. Small crop of Indian corn, great crop of apples. Very healthy. Vermes, Pertussis.

Nov. Therm. highest 58. lowest 29. greatest variation 15 warmer.

Barom. highest 30.0. lowest 28.9. greatest variation 0.4$\frac{1}{2}$ lower.

Wind variable. Twenty days fair and pleasant, some snow, ground frozen and thawed, open at the end of the month. 6 Aur. Bor. Remarkably healthy. Odontalgia, Pleurodyne, coughs and colds.

Dec. Therm. highest 46. lowest 2.* greatest variation 19 warmer.

Barom. highest 30.2. lowest 28.5. greatest variation 0.7 lower.

Wind northerly. Fair, windy and cold, ground frozen very hard by the 9th, plenty of snow by the 15th and afterwards. 3 Aur. Bor. Healthy. Odontalgia, Pleurodyne.

It appears, from the foregoing statement of diseases, that painful affections of the teeth, complaints from worms in the intestinal canal, and cutaneous eruptions, hold a conspicuous place in the medical history of this part of the United States. From several years' observations I am induced to believe, that these complaints constitute at least three-eighths of all the ailments for which a practitioner (in the country) is consulted in this part of the New-England States. This conclusion has led to some reflections which have been communicated elsewhere, and need not be repeated here.

* On the 20th.

State of the Thermometer for fifteen days in January, 1805.

D. M.	Hour. A. M.	Hour. P. M.	Degree.	D. M.	Hour. A. M.	Hour. P. M.	Degree.	D. M.	Hour. A. M.	Hour. P. M.	Degree.	D. M.	Hour. A. M.	Hour. P. M.	Degree.
2		9	17	5		9	7	12	8		5	16		2	17
3	7		17	6	7		0			2	18			9	20
		9	20			2	12			9	20	20	7		15
4	7		18			9	9	14		2	20	22	7		9
		2	11	7	7		10			9	10			2	14
		9	6			2	19	15	7		0/7			9	12
5	7		3	8		9	19			9	10	23	7		9
		2	12	9	7		17	16	7		0/4				

Therm. highest 45°. lowest 7° below 0, greatest variation 28° warmer. Barom. highest 30.3¼. lowest 28.6. greatest variation 5½10ths lower. Winds westerly. Cold, blustering, overcast, falling weather. Three feet of snow on a level, considerable rain. 4 Aur. Bor. Total eclipse of the moon on the 15th, when it was coldest. Psora, Vermes, Odontalgia, Cyn. Trach. coughs and colds.

A few REMARKS *on the* WEATHER *and* DISEASES *of* 1805; *being intended as an Appendix to the Report, made on the third of May last, to the Georgia Medical Society, on the "Topography of Savannah and its Vicinity," read June* 7, 1806.* *By Dr.* J. E. WHITE.

[Continued from Hex. ii. vol iv. p. 368, and concluded]

DURING the course of the last year, I had intended to note such occurrences from time to time as, when arranged, would form something like a medical register for our city; but ere I commenced making any remarks, the year was considerably advanced. Having no thermometer in the early months, I made no observations on the temperature of the air, nor did I notice its variations from dry to moist, or vice versa. After I had made a beginning, the interrup-

* In transcribing this paper, some alterations have been made, and some remarks added; it is hoped not for the worst.

tions were so frequent as to allow but a small portion of time for mature deliberation; and I may add to this, a habit of carelessness too common with medical men, a degree of inattention highly censurable, which prevents them from profiting from those hours of relaxation from business which most of them enjoy in a greater or less degree.

Occasionally, however, I made a few remarks, and though forming but a very imperfect sketch of the subjects, I take the liberty of offering them to the society, impressed with a hope that some one will complete what I have barely begun.

The weather during the month of May was pleasant for the season, the mercury in the thermometer, hung in the shaded air, ranging between 68 and 74°; and in nearly one half of the month it was below 80° at three o'clock P. M. During this month there was rain on eight days, and many others were overcast or cloudy. The prevalent winds were from S. E. S. S. E. N. W. S. S. E. by S. S. W. by S. N. N. W. W. N. W. W. E. and N. N. E. The first prevailed six times, and the N. W. three times.

June was also very cool, and in this month much rain fell. Sixteen days I have noted as rainy. The mercury stood at $91\frac{5}{10}$ at 3 P. M. on the 7th; and except two other days, viz. on the 28th and 29th, when it rose to 91°, it was always below 90°; frequently at 82, 81 and 80°; and several times even below this last number. On the 30th, at 3 o'clock P. M. it was at 77°. At this hour it was raining. In the early part of the month a hail storm did considerable injury in the vicinity of the city; and on the 24th an immoderate quantity of rain fell, accompanied with very sharp flashes of lightning; during which the Exchange and a dwelling-house were struck; the latter much injured.

July was much less pleasant; the heat was more intense; and the quantity of rain which fell was much less than in the preceding month. Eight days only I have remarked to be rainy. The mercury rose to 93° twice; once to $92\frac{5}{10}$; once to $91\frac{5}{10}$, and twice to 91°. On the 26th, at 1 P. M. it stood at 91°, and in consequence of the weather becoming overcast it fell to 85° in one hour. This fall in the mercury was succeeded by a shower.

The weather in August was much less sultry, and almost uniformly pleasant for the season. On the 1st and 2d days the mercury rose to 90 and $91\frac{5}{10}$, but in every other it ranged below 90°; often not exceeding 82°, and several times as low as 81° at the hottest period of the twenty-four

hours. Eighteen days were more or less rainy. On the 19th, the quantity of rain which fell was immoderate, with incessant lightning and thunder after night. The mercury on this day at 6 A. M. was at 80°, and at 3 and 6 o'clock P. M. at 82°.

September also proved more cool than is usually experienced in our climate. On the 14th the mercury was at 88° at 3 P. M. which was the greatest height it reached in this month. During the rest of the month it ranged between 72 and 85°. Twelve days were rainy.

Thus far only am I able to give any account of the weather, and from the remarks I have made it will be observed, that the proportion of rainy days during the warm months is very considerable, effecting a corresponding range in the thermometer, and producing altogether a cool and pleasant summer.

The early months of the year were remarkable for the unusual prevalence and violence of inflammatory complaints, particularly pneumonic inflammation and sore throat. The last most commonly under the form of cynanche tonsillaris. Rheumatism was not unfrequent. The pneumonic affections occurred most frequently among the negroes on the plantations, particularly those who were not natives, and who had been ditching or performing any labour that obliged them to be in the mud and water.* Such was the violence of many cases, that they baffled the power of the most effectual remedies. The phrenitic state of fever was observed in several instances; and in some the accession was so sudden and violent that medical aid could not be had in time to arrest the progress to a fatal termination. I met with one case of pneumonic inflammation in an African, which terminated in an abscess, and ultimately in health.† Another instance merits notice, and adds to the

* This seems to be departing from the strict object of this paper, to enumerate, or rather to take a hasty view of the diseases of Savannah alone. As an apology for this and other occasional digressions, I must here observe, that the same constitution of the atmosphere alike influenced the diseases of the city and country in different degrees, as modified by local circumstances, and the more or less frequent exposure to the predisposing cause of fever.

† The fatality of our climate in the winter and spring months to *new* negroes, is of melancholy notoriety, and forms a very considerable drawback to their increase. Unused to the cold which is sometimes experienced here, with their thin and scanty cloathing, bad lodging and impoverished diet, they are incapable of resisting the effects resulting from those com-

melancholy proofs of the inefficacy of our art in the phthisis pulmonalis. The patient was a young man, in his twentieth year, who, from exposure to night air, was attacked late in December with slight symptoms of pneumonic inflammation. Alas! they were fatally illusive. Under the usual mode of treatment, there was a promise of recovery, and he became able to leave the house occasionally for a short walk or ride. This suspension of diseased action did not last long, and the unrelenting foe to long life in his family, soon evinced unequivocal marks of its approach.* The several plans of cure which have been successful in other cases, were fairly tried in succession, as justified by the failure of one, or as indicated by symptoms; but all were alike unsuccessful. Venesection, repeated blistering, and the usual auxiliaries; digitalis under different modes of exhibition, and mercury (the Sampson of the Materia Medica) under the fairest trial, were equally inefficacious, and only served to add another instance to the limited powers of our art in this disease. He died in March, preserving his intellectual faculties to the last moments of his existence, and still indulging a sanguine but illusive hope of a speedy recovery.

The months of May, June, and July, though generally healthy, were, I think, more than usually so. In the second of these months in the last year, the cholera infantum was frequent and fatal. Cases were more rare and much less fatal the present year. In the last days of July, fevers were more frequent, but generally mild, and easily yielding to the common remedies. They most commonly put on the single tertian type.† One case terminated fatally on the 25th, which

bined causes; and hence they fall easy victims to inflammatory diseases, particularly of the lungs. Interest and humanity both urge to a greater attention to their comfort; thus, not only to ameliorate the pains of slavery, but to guard against disease; often the greatest foe to the planter's hopes. The constitution of the African negroes is as unfit to guard them against the effects of our climate in the cold months, as that of Europeans, and our northern brethren in the hot. A residence of one or more years is equally necessary in both, to assimilate the systems to its versatile nature, and to shield them from its unfriendly influence. Winter and spring are the enemies of the former; summer and fall of the latter. The one should be guided by obvious rules, founded in experience, dictated by prudence and their own judgment; the other from an incapacity to judge aright, should be governed and directed.

* His father, uncle, aunt, and I believe others of his family, have fallen martyrs to the consumption; and some yet remain who have the predisposition to it very strongly marked.

† The forms of fever are not much less various than the symptoms; and it is, perhaps, as difficult to describe the paroxysm of an intermittent by

deserves some notice. This was Samuel Morse, the Editor of the Republican. I saw him in consultation on the fifth and last day of his illness. He was comatose, with a hot and dry skin, and small frequent pulse. His disease did not evince any alarming symptoms until the morning of the last day.* The fever was of the double tertian type, with an increase of violence at the return of each successive paroxysm.

The first days of August increased the number of cases; often commencing in an illusive manner, and gradually running into the remittent and continued type with alarming and dangerous symptoms. These, indeed, sometimes came on almost suddenly. In two of the first cases I saw, the stomach was the "seat and throne" of disease, being affected with almost incessant vomiting. These patients became comatose. Less arterial action was witnessed than is usual; and if I had been guided *solely* by the pulse, the lancet would have been forbidden. Small bleedings were, however, resorted to with obvious good effects: the blood did not discover any of the usual marks of inflammatory action. One of these cases terminated in health. The other was of a female, in the 36th year of her age, healthy, and not of an inflammatory diathesis. Her disease, in the early stage, evinced no symptoms to excite alarm. Each paroxysm became more violent, but the pulse was never very full, tense, or hard. Thirst, heat, and restlessness were great and distressing; and, during two exacerbations, the arms were covered with a very florid eruption. Delirium supervened, with the accession of the third paroxysm, and she was, with difficulty, confined to bed. This gradually subsided into coma. Two days before her decease, what Dr. Rush calls the "intestinal state of fever," was distressing in the extreme. The first discharges were somewhat copious and dark coloured, and they continued with frequency, but in small quantities. The tongue was smooth, dry, and inflamed. No eruption was discovered on the skin after the bowels became disordered. Every remedy that our art could sug-

symptoms which shall be undeviating, as to define hydrocephalus internus, by unerring signs. My experience leads me to believe, the single tertian type is the proper and natural character of our intermittent fever, more especially in the early months of summer; but as the causes of fever become more highly concentrated, double tertians, and forms still more complicated, will be observed, perplexing the practitioner, and rendering the cure more difficult and uncertain.

* The frequency of this occurrence in our fevers should induce us to be vigilant, and to be careful in making a prognostic.

gest was tried to arrest the ravages of disease; but the relentless monster, who, with equal certainty, puts a final stop to our cares, our sorrows, and our pleasures, hurried her to the grave; adding another triumph to his victories, and leaving a numerous circle to bemoan the loss of an amiable and beloved woman.

On Tuesday, the 20th of this month, Mr. Timothy Wilson, a native of England, died after an indisposition of about thirty-six hours. He had resided in this place the last year, and, during the summer, had been ill. He was in the 26th year of his age, of a robust habit, and in full health. On Monday morning he had the common symptoms of fever in a mild degree; took a cathartic, which operated well, and left him free of fever on Tuesday morning; but his physician judged it advisable to repeat the evacuant; this operated freely about four times. While on the close-stool he fainted, became slightly convulsed, and in this state was put to bed. A return of colour in his face, and an increase of force in the circulation, gave hopes that he would recover from the deliquium in a short time; but it was a vain and delusive prospect. A violent convulsion soon supervened, which terminated his life in a few minutes.* Conjecture was set afloat to explain the cause of this sudden and unexpected event. Different opinions were formed, as justified by correlative circumstances, and supported by reasoning. But how mysterious the ways of providence! How diversified the avenues to the tomb, and how inscrutable oft those causes which lead the way to it! An accurate and minute examination was made of the stomach, intestines, the contents of the thorax, and head; but nothing was discovered to lead to an elucidation of the fatal issue. The different viscera were in a sound and healthy state; a small extravasation of blood was found in the thorax, but too small to prove the cause of such violent effects. There was no engorgement of the blood vessels near the heart; nor any effusion in the cranium, or extraordinary turgescence of the vessels of the brain. How imperfect is yet our knowledge of the animal economy! Notwithstanding all our boasted acquirements in physio-

* I have since met with a case of fever in its early stage, terminating in a like manner, and from the same cause. Whatever explanation may be offered for the effects, they should be held in remembrance, and oblige us to enjoin patients in fever, to be guarded in the exertions they make.

logy, much, very much remains to be known to explain the varied conditions of life and health, and to unravel those laws which govern the animal machine in both those states. Darkness still surrounds many of the functions of the human body; operations are constantly going on in a healthy state of which we can only reason, and facts daily occur in diseases of which we want an explanation.

The animating account which some benevolent physicians have given us of the continual accession of medical knowledge, ultimately placing the multiform nature of disease under its absolute controul, is yet in distant vision; but the important revolutions which have taken place in the science of medicine within the last half century; the various discoveries and improvements which have been effected in every branch of the curative art, added to the alienation of the mind from the sophistical dogmas of schools, which informed without enlightening, should inspire us with the most lively hopes of having this prospect realized; it should animate us with a zeal for physical research, stimulate to improvement, fix in us habits of industry for observation and discrimination, that the monster Death may not so often exult in his victories; and that, like law, an "uncertainty," not "glorious," but melancholy, may not be always attached to our profession.

From the first week in September the increase of cases was unusually numerous and somewhat alarming: it would have been still more so had they not in general proved mild. In most instances they put on at the commencement the form either of quotidian or tertian intermittent; but deviations from both those types sometimes occurred, from the operation of various fortuitous circumstances arising from locality, and also from the operation of causes more or less violent and sudden on systems diversified as to their portion of excitability. Much depletion was seldom required, and after the primæ viæ were well cleansed, a cure was most commonly effected by the judicious administration of tonic remedies. Relapses were very frequent, and sometimes fatal. Some cases terminating in death were illusive from the commencement. With but little arterial excitement, and no pain, the powers of life gradually sunk under the most insidious forms of disease.

The first days of October were unusually cool; yet the number of diseased cases was very considerable, and the

deaths in this month much exceeded those in the last.* It is commonly remarked, that though the cases of fever are more numerous in September, they more easily yield to judicious medical treatment than in October. This increase of mortality, in part, originates from the termination of cases commencing in September, added to those which have their rise in October, ere the causes of fever have ceased to exert their deleterious influence. Moreover, the source of fever floating in the atmosphere, is in a state of greater concentration in the latter month, and, from the warmth of summer still continuing in some measure, with the influence of cool mornings and nights, the system is more predisposed to be acted on.

A few solitary cases of yellow fever were said to have occurred, and in our general exemption from this destructive malady, we have great cause for rejoicing. While other cities have been annually doomed to feel its ravages, ours, under the superintendence of a beneficent providence, has hitherto escaped.† Let not this immunity, however, lull us

* My observation confirms the generally received opinion here, that October is our most fatal month; and a comparison of the deaths in September and October substantiates its correctness. The fall of 1804 was, however, an exception, but this was the consequence of the hurricane in September totally changing the constitution of the atmosphere. According to the register kept of the deaths and burials by the sexton, they amounted in September 1804, to 49, and in October to 27. In the former month of the last year the deaths were 39, and in October 72.

† Let us not, however, be deceived by appearances, and let not the presence or absence of one or two symptoms lead to erroneous conclusions. I have elsewhere expressed my opinion in favour of the domestic origin of yellow fever, and that it is not *necessarily*, or by *any physical law*, confined to our Atlantic cities or large sea-port towns. Various facts corroborate these opinions. I have also rejected, as frequently fallacious, the giving a name to a disease from the *occasional* occurrence of one symptom, and more especially when this symptom takes place, not in the first, but in the ultimate stage of the disease. From thus misnaming a disorder, various mischiefs result, besides its bewildering young practitioners. It too often leads to fatal errors in practice. Yellow fever has been called so from the colour of the skin, though this appearance is not invariable; and other names equally inapplicable have been applied to it. Hillary has denominated it a putrid bilious fever; and Towne, febris ardens biliosa. It has also been called a malignant fever; a pestilential fever; a milignant bilious fever; a bilious remittent fever; and la fievre matelotte. Moseley calls it endemial causus, and believes it to be a higher grade of the causus, or febris ardens of Hippocrates, Aretæus, and others.—The symptoms of both justify this belief. When a disease takes its name from a symptom, this should be pathognomonic: "quod convenit, omni, soli, et semper." It should be invariable; it should, I say, exist under all circumstances, in every climate where the disease makes its appearance. Who will say this is the case of *that* symptom which has been thought characteristic of

too deeply into a sense of security, and lead us to think no danger nigh; lest, regardless of the salutary admonitions of experience, and inattentive to luminous facts, again and again brought to our view, the time may come, when, like our sister cities, ours will be the seat of desolation; its inhabitants compelled to flee for refuge, or those who may unfortunately be obliged to remain, swept by hundreds to

the malignant fever which has produced so much speculation—so much altercation among medical men? Who will assert, that black vomiting or a yellow skin always occurs in it? And who, that has been much versant in the diseases of our autumnal months, will hesitate to declare that he has seen cases of fever of equal malignancy with those that have committed such dire destruction in Philadelphia and other American cities, where neither the "vomito prieto," or yellow suffusion were manifest? In the larger cities of the United States, in the West-Indies, in Batavia, Siam, Bouilam, and Carthagena, as also at Cadiz and other places where the yellow fever has been epidemic, it may be supposed the atmosphere possessed a more highly inflammatory constitution, which, with other circumstances of a local nature, rendered more certain the occasional appearance of those peculiar symptoms which have justly been said to evidence great malignancy. No one can doubt that diseases are greatly influenced by topographical circumstances If we are fortunately exempt from that peculiar state of the atmosphere, (from whatever may be its origin, or whatever be its chemical agents) which predisposes generally to diseases of a violent nature, when powerful exciting causes are applied, I yet assert it as a truth, that from our climate, the situation of our country, the nature of our soil, and the state of its cultivation, we have a right to expect in the autumnal months, cases of fever highly malignant: and if by this term be signified a disease so speedily disorganizing the animal and vital functions as to terminate fatally in 24, 36, or 48 hours, we often have such, although there be no vomiting of black coffee-ground-like matter, or yellowness of the skin. These cases, I say, are not very rare in our most sickly season; and though they are sometimes protracted a little longer, yet they so obstinately resist the most timely and best medical exertions, and show, particularly in foreigners, such a destructive tendency, as to leave no room to doubt their being of the same nature with the malignant fever of other places, slightly modified. From what I have already remarked respecting the topography of Savannah and its vicinage, and from the known influence of long continued heat upon a moist soil filled with dead vegetable matter, is it not more a matter of wonder that diseases of a virulent nature do not occur more frequently than they do, especially with strangers, in September and October? What good reason have we not to expect violent diseases will be produced from miasmata extremely volatile or concentrated, when the exciting causes are powerful in their application? Those only who are greatly prejudiced, or who resist the plainest evidence, will reply in the negative. They must, I repeat, be blindly partial, or obstinately opposed to the powers of reason and observation.—Our characters are not so unsullied, the purity of our lives so exemplary, or our virtues so many and so exalted, as to justify the hope of our being the favourites of heaven, or to warrant the impious expectation that a wise and merciful Being will exempt us from calamities the inevitable consequence of physical laws, unchangeable, I may almost add, in their nature.

an untimely grave! Causes exist which are in a constant state of increase.* If we reason from analogy, they will, I fear, ere long, engender such diseases as will clothe our city in the habiliments of mourning, and make us lament, though late, that we were so careless, and profitted so little from the lessons we have had.

To a season of sickness, and its concomitant distresses, a return of health gradually succeeded, as the weather became cool, with frosty nights; our city again put off the gloom of despondency, and resumed an air of pleasure, and of busy, bustling life.†

It may not be useless and uninteresting to add to this paper, a summary of the deaths, agreeable to the register kept by the sexton, in conformity with an ordinance of our city council. It will enable us to make a comparative estimate of the healthiness of different months, and trace the gradual increase of diseases, both in frequency and virulence. It will do more; for by noting a few particulars, it will evince the proportion of deaths among foreigners to those who are natives. In the sexton's register no notice is taken of the deaths among the negroes; hence, in judging of the total number of interments, we are to make an allowance for these before we deduce any inferences respecting the proportion which the burials bear to the sum total of the inhabitants.‡ The blacks are liable, though in a less degree, (from possessing consti-

* Among these may be specified the continued clearing of the swamps, and the increase of this evil by cultivating them in rice; and the ill-founded policy of erecting houses under the bluff on *made*-ground, thus encroaching on the river, rendering insecure the buildings so erected, and laying the foundation for future mischief. The practice of filling the wharves with logs of wood, brush, and other vegetable matter, to which the water has access at every flowing of the tide, has a just claim to notice, and the serious attention of our magistrates. Will we for ever remain stupidly opposed to learn wisdom from experience, and be foolishly determined not to shun the calamities which other places have been devoted to feel from such sacrifices of every thing dear and valuable to sordid interest; to interest, not real, but misconceived?

† Disease was not immediately checked by frost. The first was on the 23d of October; and of 72 deaths in this month, 14 were subsequent to that period.

‡ From a census completed on the 30th of August, 1804, the whole number of white inhabitants in the city was 2926. If an allowance be made for the annual increase from emigration, &c. and we deduct for those who absent themselves during the sickly months, it will not be far removed from correctness to calculate the number of white people in the city during the last summer to have been about 2500. Perhaps they were rather below than above this estimate.

tutions more assimilated to the climate) to our summer and autumnal diseases; and, although from this circumstance particularly they do so often manifest great malignity in them, it is probable, from the precarious attention they generally receive in sickness, the deaths among them are as numerous, (comparatively speaking) as among the whites.

The following statement will show the number of deaths and burials within the city for six months, and also of those from the age of 20 to 40, inclusive.

	Total.	From 20 to 40 years.
June	12	4
July	8	6
August	21	14
September	39	17
October	72	39
November	28	15
	175	95

Of this whole number, fifty-nine were foreigners, and forty-six were natives of the northern states—most generally from New-England. Many were strangers, having been here but a few days, and the rest had resided here for various periods. Thirty-nine were females, making the proportion to the males as one to three and an half; and forty-one were mariners.

Though it is somewhat irrelative to the subject of this communication, I solicit leave to make a few inferences from the above enumeration of the deaths.

1st. The number of deaths which occurred among those who were not natives, (though the fact has been long established) is a corroborating proof of the very noxious influence of our climate on them. Melancholy facts, in various parts of the world, have established the truth, that hot countries are the bane of persons who immigrate thither from colder. Almost all are liable to what is commonly termed a seasoning, which is a fever more or less of an inflammatory nature; being determined in its violence, by constitution, age, habit of body, local circumstances, and the degree of the exciting cause. It has been asserted that one half of the Europeans who remove to the East-Indies and Batavia die the first year. I know not whether the number of deaths is so great in the West-Indies, at Carthagena, and other parts of the coast of South-America; but we are well assured, from various authorities, that the climates of those places are pe-

culiarly fatal to strangers.* Nor can I say confidently, what proportion of such annually die in the two southern states; but it is certainly sufficiently large to excite in them great caution and just apprehension.

2d. Notwithstanding the natural insecurity of health in tropical countries, it is yet not absolutely impossible to be retained. A removal at a judicious period, *rigid temperance in all things afterwards*, a most careful attention to avoid getting wet, the night air, also the air of the morning before sun-rise, and an occasional dose of some mild laxative when feverish symptoms are felt, are indispensable to guard our systems from diseases, and to moderate their malignancy. Although a *few* who are rash and inconsiderate may retain their health under an opposite regimen, the *many* who fall victims to their indiscretions and temerity, should serve as a beacon for others to shun the fatal rocks upon which they split. Those who prize the blessings of health, who consider it as the best gift of heaven, and who know the precariousness of it in warm climates, should take warning from follies which lead to its destruction, and learn this truth, that temperance is the first, the great source of a sound constitution, and a tranquil mind.

3d. Hot climates, though favourable to parturition and gestation, are yet inimical to the lives of infants and children; but less so (as appears from above) than to those in the vigour of life. More than half the deaths were of persons between 20 and 40, inclusive. A vast disproportion! This mortality may be accounted for from the state of their systems predisposing to inflammatory action, from their more common exposure to a hot sun and bad weather, and their general disregard of the rigid precepts of regularity. The same reasons may be given why females escape better than the males.

* The failure of Admiral Vernon's expedition to Carthagena in 1741, and the sad catastrophe of Hosier in 1746 at Porto-Bello, have been justly attributed to the immense number of lives who fell a sacrifice to the climate in an unhealthy season. The expedition of General Dalling in 1780 to the territories of Spain in South-America, is also a distressing proof of the fatality of such a climate to strangers. Of eighteen hundred persons who were variously employed in this expedition, not more than three hundred and eighty returned towards the close of the year, and these in bad health; the rest having died. Nearly 100 sailors lost their lives on board the vessels on the coasts, and 69 officers fell victims to diseases. A similar fate befel the Europeans who took Fort Omoah (a town at the bottom of the Bay of Honduras) in 1779.

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4th. If to the almost proverbial intemperance of sea-faring persons, we add the pernicious effects of our climate in the fall months, and their uncomfortable situation on board of vessels, or in confined filthy lodging-houses, we shall be enabled to account for the fatality which every year occurs among them. Nor would it be incorrect in ascertaining the influence of climate, to add to the deaths which happen here those which take place after the vessels leave port; for it is not uncommon for half or three-fourths of the crews to fall victims to fever, (the seeds of which have been imbibed here, and are brought into action at sea) when the vessels leave our port in August, September, or October, ere they arrive in New-York, and other northern cities. Such, indeed, is so often their melancholy fate, that I lament to witness the arrival of a vessel in our river between the months of July and November.

5th. It is an obvious truth, that a constant residence in a hot climate has an undeviating tendency to debilitate the system; to produce a disposition to languor, lassitude, and indulgence; to effect a change in the countenance, from a florid colour to a pale or sallow; and to blunt the energies of mental exertion. The natives are not without genius, and have, in general, capacities for the acquirement of learning, in a degree, perhaps more than equal to those of colder climates, and possess imaginations more lively; but they too commonly relax in their exertions, and subside too early into listless apathy. Notwithstanding this effect of climate upon the mind and body, they suffer less from *violent* diseases than foreigners. Those natives who frequently remove to a colder latitude in the warm months, are almost as liable as strangers to our summer and autumnal diseases, when they happen to remain in the sickly season. Strangers have their constitutions gradually assimilated to the climate; and the coldness of the winters is seldom so much in degree or duration as to place them in the situation of new-comers. But such, being unlike those who are stationary, and having their systems constantly under the influence of febrile miasmata, are incapable of resisting the stimulant effects of its sudden application; hence they are the devoted victims.

A Dissertation *on* Conception, Menstruation, *and its Irregularities. By Dr.* Elisha Du Bois, *Physician in Orange County. Read before the Medical Society of Orange County, State of New-York: and communicated by* Wm. Moore, *M. D. to Dr.* Miller.

PHYSIOLOGISTS have been as much at a loss to account for conception as any occurrence in the animal economy. From the earliest age of science to the present day, it has been involved in obscurity, and will, perhaps, never be satisfactorily accounted for. Our principal guide in forming even a plausible theory of conception, is a knowledge of the parts of generation; but as these are remote from observation, when conception takes place, it is impossible to establish an opinion wholly free from doubts. We must, therefore, rest contented with such hypotheses as are most plausible, and carry with them the greatest appearance of truth.

Some of the ancient philosophers supposed, that during the act of coition, a vapour was emitted from the brain, and that something from the blood vessels furnished the other parts which gave animation; others, that a mixture of male and female semen in the uterus constituted the embryo; others, that male and female semen forming an union with the menstrual blood produced conception. Another hypothesis was, that the male semen alone was sufficient to form the fœtus, and that the female only answered as a nidus, and afforded it nourishment. This appears to have been the opinion of Lewenhoeck, who discovered with a microscope animalcules in the male semen, and supposed that one of those animalcules being thrown into the uterus, received from thence its nourishment during the period of gestation. Another opinion was, that the fœtus being complete in the ovum contained in the ovaria, it wanted nothing but the impregnation of the male semen, which took place by its reaching them through the fallopian tubes, the fimbriæ of which, during the act of coition, closely embraced the ovaria, and the ovum swelling in consequence of impregnation, quitted the ovarium, and fell into the tubes, and was carried thence into the uterus, where it received its nourishment. Another opinion was, that one of the animalcules which have been discovered in the semen masculinum, being carried through the fallopian tubes to the ovaria, where, being insinuated into one or more ovum

or ova, ripe for impregnation, the ovum or ova so impregnated swelling, dropped out of the ovaria into the tubes, by which they were carried into the uterus. Another opinion was, that at the time of coition, the fimbriæ of the fallopian tubes grasped the ovaria closely, and, at the same time, an ovum broke forth from its cell, was ushered through the tube by a peristaltic motion into the uterus, where it formed a junction with the semen masculinum, and impregnation took place by one of the animalcules insinuating itself into the ovum, in the same way as was supposed that it was accomplished in the ovaria.

Dr. Johnson is of opinion, that impregnation is accomplished by absorption; he mentions several instances of girls with imperforated hymens, and women who have conceived without the complete penetration of the male, and therefore concludes that the semen masculinum must reach the ovaria in some other way than through the uterus and fallopian tubes. He supposes that the finer parts of the semen are taken up by the absorbent vessels of the vagina and uterus, and are by them thrown into the circulation; when reaching the ovaria, and meeting with one or more of the ova ripe for impregnation, it enters into, and animalizes it or them. This last appears to me to be the most plausible of all the opinions hitherto mentioned respecting conception. I am of opinion, however, that impregnation very seldom takes place in the ovaria, but in the uterus generally; and also, that it is not necessary that an ovum, ripe for impregnation, should be retained in the ovarium till an intercourse takes place with the male; but that when it is fully ripe for impregnation, and is swelled to a certain bulk, an irritation is thereby produced in the ovarium; a propensity to venery, and an involuntary erection of the tubes also takes place, the fimbriæ of which grasp the ovaria, and force the ovum from its cell; a peristaltic motion is then excited in the tubes, which conveys the ovum to the uterus, where it attaches itself to some of the vessels of the uterus fitted to receive it: at this time the blood is invited to these vessels with more force than usual, but for want of the male semen to stimulate the ovum into action, and promote its growth, it dies and is forced off, leaving the mouths of the vessels to which it was attached open, from whence a flux of blood ensues. But if it is in time supplied with the semen masculinum, that being introduced into the blood vessels to which the ovum is already attached, it

is stimulated into action, and animalization succeeds therein. In what manner the male semen acts on the ovum to produce this effect I cannot pretend to say.

On this hypothesis I have formed an opinion respecting menstruation. The human uterus is in general the only one that menstruates. One of the species of apes has been said to menstruate. I once saw an instance of menstruation in a mare, the owner of which informed me that she had a regular monthly discharge when she was not with foal. There are few instances however of this evacuation from brutes, which may be accounted for from the uterus being endowed with stronger muscular fibres than the human uterus, which suddenly contract and close up the mouths of the vessels.

The blood, at different ages, is destined by nature in larger quantities to one part of the body at one time than at another, and about the age of thirteen or fourteen years the evolution takes place in the parts of generation: at this period the pubes begins to be clothed with hair; the breasts enlarge, and menstruation begins, which is preceded by chills, flushing, with some difficulty of breathing, pain in the loins and epigastric region, pain and giddiness of the head, nausea and sickness of the stomach, and some vomiting, with a disagreeable smell of the breath; a wan livid hue in the face, and symptoms of irritation about the uterus. Sometimes those symptoms run to a great length, at others make little or no appearance; but they generally appear more or less at every period of menstruation: the quantity of blood separated is generally about ℥vj; some having a greater, and others a less evacuation, according to the temperament of the woman, and the climate in which she lives. This flux of blood generally returns every lunar month regularly.

There has also been a variety of opinions respecting menstruation and its causes. It has been thought by some to arise from a despumation, founded on a supposition, that there is constantly a fermentation going on in the body: hence it has been supposed that women, in the time of menstruation, could stop the vinous fermentation; others have supposed that it arose from the effect of the moon; others, that it is occasioned by the venereal stimulus. Some have supposed that it is occasioned by universal, and others advocate that it is produced by partial plethora. The last mentioned is the present generally received opinion: I think, however, that this is also liable to exception; for blood-

letting largely, even to twice or thrice the quantity discharged in menstruation, will not prevent the return of the flux, nor will it in the least check its progress after it has taken place, but, on the contrary, will almost always increase it.

It is generally believed, and with propriety, that epistaxis depends upon plethora; and we find that blood-letting will not only check the progress of this hemorrhage, but will effectually prevent its return on those who are subject to it. Now, if menstruation depends on plethora, either general or partial, would not blood-letting have the same effect as in cases of epistaxis? and would not women of sanguine temperament, and strong muscular fibres, experience the menstrual flux in greater proportion than those of lax habit and weakly constitutions? But experience and observation prove the contrary; for women who live in very cold climates, and are of a sanguine temperament, menstruat very little; those in temperate climates more, and those in hot climates menstruate profusely.

That the vessels of the uterus are not so easily ruptured as has been imagined, is evident from the great distention they are capable of in the period of gestation. During this period, the blood must undoubtedly be thrown with much more force into these vessels than is usual when the uterus is in its unimpregnated state. If a partial plethora existed in the vessels of the uterus, and, at the same time, an obstruction of menstruation, from cold spasmodic stricture, or any other cause mentioned by authors, we might calculate on the case as being attended with much danger; for topical inflammation would be the consequence, which, if not discussed, would inevitably end in suppuration, gangrene, or mortification. These complaints, however, seldom or never occur in consequence of obstructed menstruation independent of some other cause. I believe that menstruation is produced by some other cause than either universal or partial plethora, and that cause must be natural. I can, however, account for it in no other way than by admitting that the ovaria of most healthy women are capable of ripening an ovum or ova menstrually, which descending, as before observed, into the uterus, is there attached to some of its vessels; when the blood is invited to that particular part with more force than usual, and after being attached a certain time, and not receiving the influence of the male semen to stimulate it into action, and animalize it, and therefore not yielding to, or ex-

panding with this increased impetus of blood, it is, like a female flower, whose germen not having received the prolific influence of the pollen of the male plant or flower, blasted, dies, and a gradual separation takes place, leaving an hemorrhage from the mouths of the vessels to which it was attached; whence originates the menstrual flux. I am of opinion, however, that after the ovum is fairly detached, the vessels to which it adhered do not emit red blood, but as long only as it is partially attached, the vessels yield red blood; and after a complete separation has taken place, the vessels contract and emit only a serous fluid. In parturition, after the delivery is accomplished, the lochia consist of red blood, which gradually becomes paler, until it becomes almost colourless, and less in quantity until it has ceased. The reason why the lochia continue longer than the menstrual flux is, that the vessels of the uterus, before delivery, having been long and greatly distended, require a longer time to contract and recover their tone.

During the period of gestation, women do not menstruate. Here the determination of blood is diverted from the ovaria, and is directed to the vessels of the uterus for the support of the fœtus; and nature has so contrived, that during this period, the determination is not sufficiently strong to the ovaria to ripen an ovum.

When menstruation is too profuse, it is called menorrhagia. This disease is said to be a plethoric state of the uterine vessels, which I very much doubt, for women of lax habit are more subject to it than those of a sanguine temperament. I think it is more probable that menorrhagia is occasioned by the partial detachment of an ovum after it has been attached to the vessels of the uterus; and that, owing to the laxity of the uterus, the ovum is not so easily separated from some of its vessels, and those from which it is separated continuing to pour out blood. This is the case in parturition; and more particularly in early abortions, where the placenta, or the ovum, is not wholly forced off by the contraction of the womb, the hemorrhage continues immoderate until a separation is completed; and the moment this takes place the hemorrhage abates.

In menorrhagia any thing that will act as an astringent upon the uterus will cause a separation of the ovum, and immediately relieve the patient. Upon this principle I account for the good effects of cold applied to the pubes and region of the uterus; for cold, acting as an astringent to the uterus,

causes it to contract, and force off the ovum, and the hemorrhage abates.

Blood-letting I have never found serviceable in this complaint; and I have never experienced any great benefit to arise from the administration of opium, though it is strongly recommended.

Defective or suppressed menstruation is termed amenorrhœa. This disease is placed by Dr. Cullen in the class Locales and order Epischeses. He enumerates three species, viz. amenorrhœa emansionis, amenorrhœa suppressionis, and amenorrhœa difficilis. Some authors mention but two kinds, viz. Emansio mensium, and amenorrhœa suppressionis. The first is defined to be in those who have arrived to the age of puberty, in whom, after the usual time, the menses have not made their appearance; the second in adults, where the menses, having already begun to flow, are suppressed.

Dr. Cullen supposes that the retention of the menses may be referred to a certain state of the ovaria. This may possibly be the case in some instances, but I believe it might be with more propriety referred to a mal-conformation, or spasmodic constriction of the fallopian tubes, which prevents or obstructs the passage of the ovum into the uterus. Dr. Cullen distinguishes amenorrhœa suppressionis into varieties, idiopathic and symptomatic. It is said that the idiopathic species originates from causes applied to the uterus, as cold to the part, fear, grief, &c. The proximate cause is said to be a spasmodic stricture of the extreme vessels of the uterus. I take it that the proximate cause does not exist in the vessels of the uterus, but in the fallopian tubes, which are affected with spasmodic stricture, preventing the descent of the ovum into the uterus.

After detention or suppression has continued some time, a train of evils usually follow, and nature, in consequence of its repeated unsuccessful efforts to expel the ova from the tubes, is almost exhausted, and the system is worn down into a state of debility, which is succeeded by consumption, dropsy, or some mortal disease. In the beginning of this disease, venesection, together with warm fomentations to the region of the uterus, with an intention of taking off the spasmodic stricture of the tubes, is serviceable. Brisk purgatives, and such as stimulate the rectum may also be proper, by increasing the peristaltic motion of the fallopian tubes. I have often seen good effects from blood-letting

in small quantity, although the patients were considerably debilitated from the effects of amenorrhœa. But if amenorrhœa is symptomatic, blood-letting and drastic purgatives would be highly improper. I think amenorrhœa, under such circumstances, ought not to be attended to, until the disease, of which it is a symptom, be removed, as it is probable that the ovaria are incapable, when the patient is debilitated by other diseases, to ripen an ovum.

It will not, perhaps, be improper to relate a case of amenorrhœa which lately came under my observation. The patient had been for several months afflicted with a suppression, and when I was first called to attend her, she appeared to be very much debilitated; pulse small and weak, pains in the back, loins and hips; symptoms of irritation about the region of the uterus; countenance pale, cough, difficulty of breathing, dizziness, and sometimes faintness. I at first gave her tonics, and directed her to the use of wine; and when some of the above symptoms came on, I opened a vein in the foot, but procured only a small quantity of blood; but it was sufficient to allay the irritation, and the symptoms in some measure abated without any show. About three weeks afterwards the symptoms again increased, when I opened a vein in the arm, and drew about ℥ vj. blood, and gave her a cathartic, which operated well. The symptoms of irritation then abated. About the fifth or sixth day after the bleeding, the menses made their appearance, and continued plentiful three or four days. I advised her to persist in the use of tonics and wine until her health was restored, which was in three or four weeks. She has had her menses regularly since.

In this case I suppose there was a spasmodic constriction of the fallopian tubes, which was taken off by the bleeding; the ovum was then permitted to pass into the uterus, where it attached itself to the vessels of the uterus, but for want of the male semen to animalize it, it was separated, leaving an hemorrhage from the vessels.

Want of time has prevented my treating this subject as fully as I could wish, or as I intended. I am aware, however, of the difficulties which arise in advancing a new hypothesis; and if there is any thing in this dissertation which does not meet your approbation, I have not a doubt that your charity will induce you to place me with those of comparatively far greater abilities than I can possibly aspire to, who have supported erroneous hypotheses.

SUMMARY VIEW *of the Modes by which* HUMAN LIFE *terminates in the City of New-York; digested from the Bills of Mortality, kept by Order of the Common Council, for* 1804, 1805, *and* 1806. *By* SAMUEL L. MITCHILL.

THE Common Council of New-York city have a standing regulation for obtaining regular bills of mortality. By this the attending Physician or Surgeon is required, under a penalty of fifty dollars, to leave a note in writing, with some person in the house where any person shall die, on which note shall be specified the name and apparent age of the deceased, and the disease. Sextons also are required, under a penalty of twenty-five dollars, to refuse interment in all cases where such note or ticket from the medical attendant does not accompany the corpse; provided that if there was no physician or surgeon in attendance, a similar note, signed by some one of the family, shall be received by them. All sextons, and persons having charge of vaults and burying grounds, are further directed to keep correct lists of the bodies deposited in their respective cemeteries, under the penalty of twenty-five dollars for each neglect. These are to be delivered by the sextons weekly, on Saturday morning, at the office of the City-Inspector, under a penalty of twenty-five dollars. The sexton's return must contain the name of the deceased, with the sex, age, place of residence and of birth. To these must be added, the time of the death, the denomination of the disease, and such other remarks as may be deemed useful.

By the care of Mr. Pintard, the City-Inspector, an account of the deaths and diseases was drawn up, from the time the law went into operation, in the beginning of November, 1801, to the end of December, 1802, making a term of fourteen months. This was published in the 6th volume of the first Hexade of the Medical Repository, page 443. Since that time, the weekly returns have been regularly printed in the newspapers, but there has been no yearly abstract of them made up for general use.

Having a desire to know the progress and result of this instructive regulation, I was favoured by Mr. Hardie, the Assistant-inspector, with the aggregate amount of the weekly bills for the successive years, 1804, 1805, and 1806. The returns for 1803 have not as yet been delivered to me; and I have understood there are some difficulties in making them

out correctly. From the three annual statements, I have made a digest, which exhibits, within a moderate compass, the maladies that terminate life in New-York. The population may be stated as not less in any portion of the specified time than sixty thousand, the number found by the national census of 1800, and rising gradually to seventy thousand and upwards, as appeared from the enumeration made by the common council in 1805.

It will be obvious that the nomenclature of diseases does not correspond with modern nosology. It is, indeed, impossible to make them conform in that respect. Physicians and others generally choose to call diseases by such names as they think preferable, without reference to books; and there are several accidents which destroy life that have no place in catalogues of diseases. It is also known to every physician of experience, that distempers occur in practice, which it is difficult to refer to any definite place in a nosological system. These then must be designated by their vulgar or popular terms; and the intelligent inquirer must put upon them the fairest and best construction which he shall think they admit.

In some parts of the time, there are defects in the returns, as in the deaths of the first six months of 1804, and in the ages during the whole of that year. During the same period too, eighty-six deaths are reported without their preceding diseases. But it was thought better to publish them in this imperfect form, than altogether to reject the returns for that year; for they still afford much instruction.

The extensive prevalence of consumption is a subject of the most serious consideration. The deaths under *that head* amount, on the average of the three years, to about *one fifth* of the whole; and when the other pulmonic disorders are taken into the account, they considerably exceed *one fourth;* and reckoning with them the columns marked "Debility," and "Decay," they make a near approach to *one third* of the whole mortality. This is a dismal picture; and there has not been hitherto any means discovered of softening the harsh features of it.

The frequency of suicide will naturally attract the notice of every observer. Whether this shocking practice be owing to the sentiment, that as a judge of his own enjoyments, a person may, at his option, surrender a life forced upon him without his consent; or, that as a citizen, he may withdraw

from society, and expatriate himself when he pleases; or that the legislature, by attaching no penalty, forfeiture, or disgrace to the person or family of self-murderers, gives indirect encouragement to the practice, may be questions of difficult decision; yet the frequency of the act shows that there is something morbid in the mental constitution of the people.

The numbers of our species that die in infancy are exceedingly great, amounting to almost *a third* of all that are born, terminating their existence before they are two years old. Among these the "infantile flux" and "convulsions," carry off a very large proportion; while the "croup" produces its full share of mortality.

The medical philanthropist will rejoice to see how the small-pox declines. The economical calculator will find data for estimating the probable duration of life. The friends to penitentiary establishments, will admire the fewness of capital executions. And although the advantages of the alkaline practice have been made known, the friends to modern improvements will regret that fifty or more persons are annual victims to the dysentery.

TABLE I.

Yearly Deaths in New-York.

1804.	Adults. 1120		Children. 944		Total. 2064
	Men.	Women.	Boys.	Girls.	
1805.	748	608	544	452	2352
1806.	682	507	555	481	2225

TABLE II.

Monthly Deaths in New-York.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1804.							902*	331	220	237	171	203	2064
1805.	178	146	129	179	123	127	202	319	296	349	140	164	2352
1806.	146	134	168	187	175	148	212	255	242	177	181	200	2225

* The number of deaths for January, February, March, April, May, June and July could not be obtained separately. The total amount, however, has been accurately ascertained.

TABLE III.

Relative Proportion of the Ages, derived from the Bills of Mortality.

Year.														
1805.	513	210	157	74	130	341	336	239	155	102	61	28	5	1	2352
1806.	522	242	190	75	111	250	284	223	122	102	62	34	8		2225

Still-born, and those who die under 1 year.	between 1 and 2 years.	2 and 5.	5 and 10.	10 and 20.	20 and 30.	30 and 40.	40 and 50.	50 and 60.	60 and 70.	70 and 80.	80 and 90.	90 and 100.	100 and upwards.	Total.

TABLE IV.

Names of the Accidents and Diseases that induce or accompany Death in New-York.

	Pulmonic Affections.								*Diseases chiefly Infantile.*								*Moral Infirm.*					*Intestinal Diseases.*								
Year.	Consumption.	Debility.	Decay.	Hectic fever.	Pleurisy.	Inflammation of lungs.	Cold.	Asthma.	Still-born.	Infantile flux.	Croup or hives	Apthæ or sprue.	Teething.	Whooping-cough.	Worms.	Convulsions.	Hydrocephalus or dropsy of head.	Intemperance	Hanged.	Murdered.	Infanticide.	Suicide.	Cholera morbus.	Colic.	Cramp in stomach	Diar. hœa.	Dysentery.	Inflammation of bowels.	Inflammation of stomach.	Diseased liver.	Vomiting of blood.
1804.	499	37	43		36	40	18	6	22	192	75	23	33	19	27	169	19	12		2	1	10	12	5	3	13	49	27	8	5	
1805.	462	49	62	2	32	53	15	3	47	195	70	23	30	19	34	192	16	17		3	4	26	19		1	16	60	17	6	7	1
1806.	354	62	140	3	41	58	25	11	51	166	106	36	44	72	45	195	22	11	2	4	2	15	9	4	1	1	52	31	14	11	1

TABLE IV. CONTINUED.

	Febrile Diseases.											*Casualties.*																											
Year.	Bilious.	Inflammatory.	Intermittent.	Malignant.	Nervous.	Puerperal.	Putrid.	Remittent.	Scarlet.	Typhus.	Small-pox.	Burns & scalds.	Drowned.	Sudden death.	Drinking cold water.	Other casualties	Frostbitten.	Influenza.	Apoplexy.	Palsy.	Epilepsy.	Dropsy.	Cancer	Diabetes.	Gout.	Gravel.	Jaundice.	Abscess.	Childbed.	Spitting blood.	Hæmorrhage.	Mania, lunacy, or insanity.	Lock-jaw.	Mortification.	Old age.				
1804.	8	1	5		27		6	9	14	20	169	11	24	37		24		3	22	14	5	68	7			5	3	7	16	1	8	3	7	9	39				
1805.	22	9	4	270	19	5	3		4	56	62	14	32	18	11	21	4		31	15	7	83	6	1	2	3	4	5	12	4	6	5	6	9	46				
1806.	11	6	7	2	12	1	3	9		81	48	18	35	27		24	2		20	20	16	89	10		3	6	4	3	14	3	10	7	7	11	57				

TABLE IV. CONTINUED.

Year.	Quinzy.	Rheumatism.	Hernia or rupture.	St. Anthony's fire.	King's evil.	Scurvy.	Sore throat.	Syphilis.	Ulcer.	Diseases not mentioned.
1804.	9				6	1	10	9	4	86
1805.	6	3		5	4	1	8	14	5	
1806.	4	3	1	7	4	6	17	12	6	

A CASE *of* PROCIDENTIA UTERI, *in the Time of* PARTURITION: *Communicated by Dr.* CHATARD, *of Baltimore, to Dr.* MILLER.

ON the 19th of last May I was called, about four o'clock in the afternoon, to visit a negro woman, in her first pregnancy, who had been in labour from seven o'clock in the morning. When I came, the midwife, who had been with her for several hours, informed me that there was something extraordinary in the case. I examined the patient, and perceived a round and flabby substance, proceeding from the vagina, from seven to eight inches long, and whose surface was smooth and easily compressible, though entirely dry. Having found, at its extremity, an orifice which allowed the passage of two or three fingers, I had no difficulty in ascertaining it to be a prolapsus of the womb. I attempted to reduce it, but the attempt did not succeed. The head of the child had already entered the pelvis, and was then strongly compressing the body of the uterus against the arch of the pubes, and other parts of the lower portion of the pelvis. In these circumstances, I supposed the first indication to be fulfilled was to dilate the orifice of the uterus, which was found to be extremely rigid. I exerted myself steadily for an hour to accomplish this dilatation without effecting much, and even without bringing back her pains, which had not been felt for six hours. Being then obliged to leave the patient for two hours, I directed the midwife

gently to continue the attempt to dilate, and to introduce, in succession, all the fingers into the orifice, if it should be in her power. But I found, at my return, that she had succeeded no better than myself, and that the uterus continued to be insensible to every kind of stimulus. Despairing then to see the labour accomplished by the powers of nature, and apprehensive of the accidents which might arise from the compression of the uterus, as well as from the violent strain upon its ligaments, which seemed likely to take place, I resolved to apply the forceps, and thereby to terminate the labour speedily, and as gently as possible, both with respect to the mother and child. The blades of my forceps being rather more narrow than common, I applied them with more ease and expedition than I could have expected, and, in a few minutes, I accomplished the delivery of a living child, without any other accident than a slight laceration of the os tincæ, which, perhaps, other practitioners in my situation would have determined, in the first instance, to incise, on account of its extreme rigidity, and the difficulty of effecting the dilatation of it by the fingers. But my opinion was decided not to perform any such operation, being persuaded that thereby the laceration would have been rendered greater and more dangerous; since there was not really space enough for it; and even supposing it to take place to the greatest degree of capacity for extension in the orbicular fibres of the orifice, this stretching might then be such, that very little more would be necessary to be done in order to allow the delivery of the child, and that, consequently, no laceration would be produced but to a very small extent; and this, to my great satisfaction, proved to be the fact. Nevertheless, as the success of an operation does not always establish the correctness of it, I allow every person, as he may please, to approve or censure my practice. If it should be supposed that the action of the abdominal muscles would have been sufficient to effect the delivery, I shall only remark, that cases of this kind must be considered as extremely rare, since Mauriceau, who practised midwifery at Paris for upwards of thirty-five years, only mentions one instance of prolapsus uteri in time of parturition: and this case differed exceedingly from that which I relate; for when he was called, the head of the child had already passed the vagina, and was rapidly dilating the os tincæ, which retained the whole of its power, and was enabled to expel the child in a very short time. In fact, occurrences of this kind must be ex-

tremely rare, since the womb always has a tendency to rise higher, in proportion as the period of parturition approaches, and as it is more completely supported by the expanded bones of the pelvis. It is therefore necessary, in order to produce this disease, that the prolapsus should take place progressively, beginning immediately with pregnancy, and that the patient, notwithstanding all the distressing effects of the disease, should neglect to make any exertions to relieve herself. The female whose case I have related, was labouring under the disease for more than six months, and still was employed in very active service, even during the very cold weather of the winter. She now (May 23, 1807) enjoys perfect health. The child is a fine one, and the consequences of its birth have been so fortunate, that she is no longer incommoded with the prolapsus, which seems to have been cured by the slight inflammation that necessarily resulted from the means employed to accelerate parturition.

REVIEW.

ART. 1. *A Geological Account of the United States, comprehending a short Description of their Animal, Vegetable, and Mineral Productions, Antiquities, and Curiosities. By* James Mease, *M. D. &c.* 12mo. pp. 496, *with four Plates. Philadelphia.* Birch *and* Small. 1807.

WITHIN the United States there is a wide field for physical research. The harvest is indeed great, and hitherto the labourers have been but few. A vast region, marked by some of the strongest features of nature, and affording phenomena and productions of its own, invites the attention of every observer. Too long has it been fashionable for our people to seek scientific news from transatlantic regions, while they neglected the manifold novelties by which they were surrounded at home. But latterly a more correct opinion has prevailed among them, and this is, where they are in quest of discoveries, to turn their backs to the east, and direct their views to the inviting and productive regions of interior America. There they will find the broadest range for observation, and the most successful issue to the inquiries. Already have febrile diseases, the fierce destroyers of human life, been so carefully investigated by our native observers, that a new æra is begun in medicine. In geography, rapid advances are making under the auspices of the national and state governments, as well as by private enterprize. Undescribed animals court the zoologist, unknown plants long to be enrolled in botanical nomenclature, and the veins and strata of the earth are impatient to be laid open to the miner.

The men most serviceable to science are observers. Creation is a great work-house or laboratory. The works of providence, in the physical world, are experiments. The movements of the tides, the conflicting currents in the atmosphere, the changes taking place on the surface of the earth, the modifications of matter, first when life actuates it, and then again when it becomes defunct, are natural processes, many of which are conducted upon a vast scale, and others inimitable by mortal art. The man who can most happily collect and interpret the appearances which are thus pre-

sented to him, is the best oracle of nature; and he who can most aptly apply the physical principles and powers to human convenience, is the most valuable improver of art. With the increase of such persons, there will be an augmentation of that genuine science, which disclaiming all hypothetical aid or alliance, rests upon the eternal basis of fact and observation.

The materials from these sources already amount to a large collection. America, in its whole extent, would fill the pages of many volumes. North-America in description, would itself form a large work; and even that moderate portion of it occupied by the United States furnishes a much more considerable body of facts than has ever hitherto been recorded in books. Every day adds to the mass of information, and enables the writers of compilations to labour with less difficulty to themselves, and with greater advantage to their readers.

Dr. Mease, though known to the public on several occasions as an original observer, appears chiefly in the present performance, as a compiler from the publications of others. Of this, indeed, he makes candid acknowledgment in his preface; and, in many places afterwards gives credit to the authorities whence he derived his materials. The authors whom he principally quotes on the geology and meteorology of the United States, are MITCHILL and VOLNEY. On the geographical part he relies chiefly upon MORSE and HUTCHINS. For delineations of the portages between the eastern and western waters, and of the Missisippi, he quotes JEFFERSON and DUNBAR. MARSHALL, MUHLENBERG, and MICHAUX, are among his principal authorities for the information he gives about vegetables. He borrows from MITCHILL, BARTON, and BARTRAM, many observations on zoology. On other subjects he generally refers to the sources of his intelligence; and we rarely find a modern publication where this is done with more justice and fidelity. To WOODHOUSE, BARNEWELL, SMITH, LATROBE, DRAYTON, and several others, Dr. M. allows a full share of acknowledgment. He has made large extracts from the *Medical Repository*, and the *Picture of the United States*.

The work before us consists of six chapters. In the first the boundaries and general configuration of the United States are given, together with his opinion of the aspect of the country, the ranges of its mountains, the constitution of their soil and strata, and of the climate of this extensive section

of the globe in general. In the second, the atmosphere and winds are the subjects of particular consideration. Remarks are offered upon a supposed change the temperature of the air has undergone; and the climate of this country is contrasted with that of Europe in respect to the precipitation of water to the earth, its elevation into the atmosphere, and the signs of electricity present. Herein too, the lakes, rivers, and plants are enumerated. The animals pass in review in the fourth chapter, arranged under the several heads: of sucklers, birds, fishes, insects and reptiles. In the fifth, the writer gives an account of the fossils and mineral springs; and the last he devotes to the rarities of nature and art, such as falls of water, excavations in the mountains, cavities under ground, remains of forts and other works, left by our unknown predecessors in the western districts, and to a description of the two stately bridges lately constructed, the one over the Delaware, and the other over the Schuylkill, on the great post road through the continent.

We should here close our account of this agreeable and instructive compilation, did we not consider it worth our while to animadvert a little upon a mistake which we believe the author has insisted upon in p. 350—51, where he treats of *game birds*. He agrees with his friend of New-York that there is no pheasant found indigenous in America; and that the New-Yorkers are correct in calling that bird a quail, which the Pennsylvanians denominate a partridge. But Dr. M. differs from that gentleman as to the name and character of the bird which the New-Yorkers call partridge and the Pennsylvanians pheasant. The New-York sportsman says, that the *Tetrao Cupido* of Linnæus is the Pennsylvania pheasant, and so says Professor Barton. But Dr. M. opposes himself to both these authorities, and says, the *ruffed grous*, or *Tetrao Umbellus* is the bird. We have no doubt, on reviewing the whole subject after perusing the pages of our author, that he labours still under a misapprehension. He has confounded the names and characters of two very distinct animals. He writes, for example, of *a ruff on each side of the bird's neck;* when the very definition of a ruff is, that *it surrounds the whole neck*, as we see in the portraits done in the sixteenth century. And this is the character of the Long-Island grous, as distinguished from the pinnated and drumming fowl called the New-York partridge. We recommend to Dr. M. a reconsideration of this subject.

ART. 2. *A Sketch of the Geography and present State of the United Territories of North-America; to which is added, a List of the several Nations and Tribes of Indians in Canada and the United States, &c. &c.* 16mo. pp. 57. *Philadelphia.* Bartram. 1805.

THERE was an ancient Grecian adage, that a " great book was a great evil." By the rule of contraries, it might be said, that a " little book was a little evil." And, at that rate, the present publication is one of the smallest ills that ever came from the press.

But we go further in our account than to give it a mere negative character. For it comprehends, in very moderate limits, a large body of information. The chief part of the work consists of eighteen statistical tables; the first of the United States, and the seventeen following ones of the respective States in the Union. They really comprehend *multum in parvo.* For within an exceeding small compass, the extent, boundaries, surface in square miles, number of counties, amount of inhabitants, male and female, white and black, bond and free, increase in population for the preceding ten years; strength of the militia, exports of domestic and foreign produce, tons of shipping, fisheries, banks, and several other subjects, appertaining to the respective States, are separately comprized. There is also given a concise view of the executive, legislative, and judiciary departments of the several constitutions, with the qualifications of electors in each commonwealth.

As a frontispiece, the author has added the " National Family Tree," springing from the people, and branching forth into seventeen Republics.

We are so well pleased with this performance, that we should be glad to see it exhibited in a fair view upon a sheet, after the manner of a map or chart; and the five territories of Indiana, Missisippi, Orleans, Louisiana, and Michigan, added to the seventeen States. We hope, when this is done, there will be a corresponding amendment of the title, and that, from time to time, the new and succeeding editions will comprehend the further facts which the progress of society affords. With such corrections, this promises to be the most instructive publication for its price and size that has for a long time been offered to the public upon the subject of political economy, or of statistics.

ART. 8. *Travels from Buenos-Ayres, by Potosi, to Lima, with Notes by the Translator, &c. By* Anthony Zechariah Helms, 12mo. pp. 287. *London.* Phillips. 1806.

ABOUT half this volume is occupied by the travels of Mr. Helms. The other half is a compilation from several sources, concerning the viceroyalties of La Plata, Chili, and Peru, and the natural curiosities, mountains, and temperature. The book is evidently a *seasonable* publication, and intended to suit the temper and feelings of the people for whose use it was compiled, at the time when the British expedition was going on against Carracas and Buenos-Ayres, and before their forces were beaten by the Spaniards. The diary is one of the most meagre and uninteresting we ever read; and the supplementary papers are of too dubious authority for us to lay much stress upon. The most entertaining, and, we believe, the most instructive part of the volume is the introduction, which, in behalf of the whole, we lay before our readers:—

"The improvement which M. de Born, of Vienna, had introduced into metallurgy, by his new method of amalgamation, attracted, in the year 1787, the attention of the court of Spain, in whose American provinces they had, from the scarcity of wood, been obliged to have recourse to a rude kind of amalgamation for separating and purifying the nobler metals.

"M. d'Elhugar, director-general of the Mexican mines, whose works prove him to be an intelligent mineralogist, was accordingly sent to Hungary to make himself master of Born's method of amalgamation, and to engage expert German miners in the Spanish service, for the purpose of restoring, with their assistance, the American gold and silver mines to their former flourishing state. M. Helms, then chief assayer of the mines and mint at Cracow, and the Baron von Nordenflycht, a Swedish mineralogist, director of the mines at Miczanagora, in the district of Cracow, entered on the most advantageous terms into the Spanish service; the former as director of the smelting-houses, and of the process of amalgamation, and the latter as director-general of the mines in Peru.

"Accompanied by their families, a few negro servants, and a great number of German miners, they sailed from Cadiz for Buenos-Ayres; and, on the 29th of October, in

1789, the spring season in that part of the globe, began their journey at first in carriages, and afterwards on horseback, by the common route of the post, in an oblique direction across South-America, through Tucuman, and over the Cordilleras, to Potosi and Lima; an extent of way, amounting from Buenos-Ayres to Potosi, to 1700 miles, and from thence through Cusco and Guancavelica, to 1300 miles.

" In Potosi, the German commissioners remained until the 30th of January, 1791, and, during their residence, endeavoured to dispel the incredible barbarism and ignorance that prevailed in the mint and mining departments there. Helms, for his part, erected a laboratory, in which he daily read lectures, accompanied with suitable experiments, to an audience, composed of officers of the mint, and proprietors of the mines; and fully instructed six young men in the science of metallurgy. Supported by the governor, he succeeded in exposing the ignorance of the American overseers and officers of the mines and mint; although the latter counteracted with all their might the royal commissioners, and particularly Helms, by secret cabals and the basest calumnies. In writing, and in conversation, they decried the Germans as arch-heretics, German Jews, and cheats; as men, in short, who, it was to be feared, would corrupt the morals of the honest miners and their overseers; and tried every means to render them suspicious to the proprietors of the mines, fearing lest, enlightened by Helms and his associates, they should examine too narrowly into the conduct of their ignorant and roguish servants.

" They even excited the Indian labourers against them, by insinuating that the foreigners had come solely for the purpose of working the mines by machinery, and would thus deprive them of the means of subsistence. In this opposition they were encouraged and joined by a numerous band of merchants in the principal cities; as Helms, in particular, spoke loudly against the enormous usury by which they oppressed the workers of the mines, and made every effort to put a stop to their rapacity.

" Scarcely had Helms arrived in Lima, when, at the desire of the intendant of Guancavelica, he was ordered to proceed to that celebrated quicksilver-mine, to introduce there the Idrian furnaces. But in procuring Helms this commission, the intendant, an old Creole, who, by pretended patriotic projects, had amassed a fortune of a million of piastres, had no other end in view but to derive a profit from

furnishing the necessary building-materials, for which he received more than four times their value; and when Helms set his face against his nefarious proceedings, he had the address surreptitiously to procure an order from the viceroy to suspend the work. Vexation at the unjust treatment he here met with, threw Helms into a fever, which caused him to leave Guancavelica.

" Two other commissions which he received from Lima, to introduce a better method of working the mines at Pasco and Bellavista, fifty miles from Lima, proved equally fruitless; as the viceroy absolutely refused any pecuniary assistance from the funds appropriated to the promotion of the mines, and would not permit him to raise the necessary supplies by means of a loan. All he could obtain was a commendatory epistle in praise of his zeal.

" He therefore resolved to leave Peru, a land morally and physically pernicious to him—where, in the execution of the most dangerous and laborious commissions, he was obliged to act, not only as a director of the smelting-houses, but likewise as a carpenter, smith, and mason. Accordingly, in the beginning of the year 1793, he sailed from Callao, the port of Lima, on board of a register-ship; and, after a passage of two months and a half, round Cape-Horn, safely arrived in Cadiz. Having been obliged to spend seven months in Madrid, in tedious solicitations, to have the terms of his agreement fulfilled, he at last obtained a small pension for life, on which he lived lately at Vienna.

" In 1798 M. Helms published an account of his travels, which is in the proper sense of the word a *Journal:* every page containing, unaltered, the remarks made and written down on the spot.

" Station after station, the number of miles daily travelled are indicated; and interspersed we find remarks on what he every day had seen, and likewise extracts from the official details on the state of the mines which he had examined.

" M. Helms is, however, only a miner and mineralogist. To the other parts of natural history he is a stranger, and few things worthy of notice relative to that science are to be found in his Journal. Even geographical and statistical observations occur only occasionally: but among them are many which contain valuable information, and which throw considerable light on the present state of these remote regions, with which we are yet but imperfectly acquainted.

"Mineralogical and metallurgic remarks on Potosi and Peru, and on the Cordilleras, the largest and richest chain of mountains in the world, which Helms had travelled over in every direction in length and breadth, from the borders of Chili to Lima, form the bulk of his work. As few, however, would have the patience to peruse the whole of his dry mineralogical day-book, the unimportant details and repetitions relative to the contents of the mountains over which he travelled, have been abridged by the translator; at the same time that nothing useful has been omitted, and every fact relative to the general state of the country, or of the people, has been scrupulously retained.

"It is to be regretted that these facts are not more numerous; but, as far as they go, their authenticity cannot be questioned. The travels of Ulloa, in certain parts of this immense continent, it will be recollected, were performed nearly seventy years ago, and perhaps no country in the world has undergone greater changes in the same interval of time than South-America.

"The APPENDIX has been compiled from the best and latest authorities, and from scarce and expensive books, by the translator; and he may, without vanity assert, that it contains the fullest and the most correct account of Spanish America which exists in any European language. He is indebted for many of his most curious facts to the valuable work on the present state of Peru, lately published by Mr. Skinner; and, in defining the boundaries of the various governments, he is indebted to Mr. Arrowsmith, the geographer, for the use of the great Spanish map of South-America. The work of Don Ulloa has been duly compared with later authorities; and the *Dictionario Geographico*, published by Don Alcedo, at Madrid, in 1788, a work till now wholly unknown to the English reader, has been carefully consulted. The detailed travels of Humboldt, it is well known, are not yet given to the world; but the various reports which have been published of them in his letters to his friends, have here served to correct many errors, and to verify many facts in the existing accounts of those parts of South-America over which he travelled."

If, after this, our readers feel any curiosity to examine it, we can assure them for their encouragement, that the perusal will not cost them either a great deal of labour or time.

ART. 4. *Conversations on Chemistry, in which the Elements of that Science are familiarly explained and illustrated by Experiments. Two volumes in one,* 8vo. pp. 429. *Philadelphia.* Humphreys. 1806.

ELEMENTARY books on chemistry are become almost as common as books on spelling and arithmetic. The compilations of Parkinson, Thompson, Henry, Accum, Jacobs, Murray, Lagrange, Spalding, Ewell, and of several others which have been published within a few years, evince the prevailing taste for this interesting science. The appearance of such works is always agreeable, and on this account particularly, that the ease and frequency of their composition show the advanced state of this department of physics, and the degree and extent to which it is understood.

The object of such publications is to simplify the science, and to render it familiar and popular. The *Conversations on Chemistry*, now before us, were written expressly for this purpose. The author is a lady, and addresses herself more especially to her own sex. We, at first glance of the book, were almost half deceived into an opinion, that she was some fair Philadelphian, *profoundly versed in attractions ;* but, on further examination, we discovered that it was an English work, republished in this country.

This female Chemist has a large share of discernment and acuteness. She has communicated her sentiments in the familiar form of conversations. These dialogues are held between her, and her two pupils, Caroline and Emily. The two girls possess the most ardent curiosity, and they extract from their intelligent instructress, Mrs. B. almost all the modern and fashionable doctrines.

These conversations are twenty-three in number. The method pursued is, to treat of the *simple* substances first, and afterwards of the *compound* bodies. Thus, after discoursing on the elementary principles, the constitution of more complicated beings from them follows in a natural order. From elements, the instructress proceeds by synthesis to form compounds of the greatest complication. By a skilful arrangement of atoms or ultimate particles, minerals, plants and animals receive each their peculiar configuration. And Mrs. B. explains these curious processes according to the modern modes of interpretation.

The author of these chemical conversations has exhibited

the doctrines and opinions now in vogue, in an engaging and instructive manner; and aided the written text by a number of engravings. The whole is executed in a manner to lead along the mind from one subject to another, by the double allurement, of scientific subjects discussed, and reaching the ear through the voices of three accomplished ladies. Being therefore peculiarly adapted to attract attention, and gain proselytes to this important branch of physics, we give the work a hearty welcome. And we hope the publisher's pains will be well rewarded by a general demand for this American edition.

ART. 5. *A Treatise on Malignant Intermittents. By* J. L. Alibert, *Physician to the Hospital of St. Louis, &c. &c. Third Edition, revised, corrected, and enlarged. Translated from the French, with an introductory Discourse, occasional Notes, and an Appendix. By* Charles Caldwell, *M. D. &c.* 8vo. pp. 379. *Philadelphia.* Fry & Kammerer. 1807.

THE ancient physicians seem to have been very imperfectly acquainted with the source of diseases arising from putrefactive exhalations. It is plain from the writings of Hippocrates, that such diseases often came under his notice, and that he observed them with his usual attention and sagacity. He discovers strong impressions of the morbid influences of certain states of the air, of winds, waters, and situations of places; but he no where appears to have formed a distinct notion of these effects as produced by the septic exhalations from dead animal and vegetable substances undergoing decomposition by means of heat and moisture. The noxiousness of such exhalations, whether arising from the surface of marshes and swamps, or from masses of filth collected in cities, is so obvious that it may well excite surprise that the source of them was not sooner ascertained.

Lancisi deserves the praise of having first exhibited this subject to the public with precision and accuracy. Residing in a southern quarter of Europe, and in a city nearly as memorable for its pestilential as for its imperial pre-eminence, the observation of this noxious power was, in some measure, forced upon his attention. Since his time, the state of our knowledge, on this subject, has been constantly in a progres-

sive course of improvement. In addition to the facts and observations derived from other observers in Italy, and in different parts of the south of Europe, the same principles have been confirmed by corresponding information from all the other quarters of the world. The various diseases originating from this source, form the great endemic of the torrid zone. Our better acquaintance with this portion of the globe, which the ancients had supposed to be uninhabitable, by reason of the intensity of its heat, is one of the most remarkable of modern improvements. While it has added so much to our knowledge of geography, to the extension and productiveness of commerce, and to the more general distribution of many of the choicest gifts of nature; it has likewise, by enlarging the dominion and fatality of diseases, improved our acquaintance with them, and augmented our means of subduing their violence. Not only the calamities of sea-faring adventurers, of traders, of visitors and settlers in these hot climates, but the more complicated miseries and desolations of fleets and armies, have all served to bring us important instruction concerning the diseases incidental to such regions. And the result of all the inquiries and experience thus obtained from so many different parts of the world, establishes, beyond question, the pernicious effect of the septic exhalations in question.

The diseases produced by these effluvia assume a variety of forms, and differ very much in their degrees of mildness and malignity. The particular grade of them, which forms the subject of this work, and which is denominated *Malignant Intermittent*, was first distinctly described by Morton. Since his time, the subject has been diligently prosecuted by Torti, Werlhof, Lautter, Senac and Cleghorn, who have investigated it in a much more accurate and profound manner. Torti, especially, a celebrated practitioner at Modena, having closely directed his inquiries to the subject, has grouped or collected into separate points of view the leading symptoms, which, under certain circumstances, bestow a sort of peculiar character on the disease. He has also adverted, with great sagacity, to its principal metamorphoses or masked forms.

The author of this work, with a commendable degree of diligence and judgment, has enriched the subject, by carefully adding to what had been done by the above-mentioned eminent writers, every thing important in more modern discoveries. Considering the ample sources from which he

was enabled to draw his materials, and the industry with which he has availed himself of all the best means of information, it cannot be considered as extravagant, to pronounce this performance the most comprehensive and accurate of any now extant on the subject.

By the term *malignant*, applied to intermittents, the author means to designate such as are marked by a train of symptoms *unusual*, *alarming*, and *rapidly fatal.*

Medical writers on the continent of Europe, in the discrimination of fevers, often use the terms *ataxic* and *adynamic.* The former word is employed by Dr. Alibert, to signify the description of intermittents here treated of, and which is properly translated *malignant.* In order to enable our readers to understand the sense in which these terms are used, we extract the following paragraphs:—

"The denomination of *Ataxic*, which Selle has already given to fevers of this character, and which Professor Pinel has adopted for those now under consideration, has appeared to us more proper to express the confusion, the irregularity, and the conflicting nature of the symptoms which constitute them. Indeed, if the fever be in a high degree nervous, do we not sometimes observe a kind of precipitation in the phenomena of the mobility of the system, which shows itself by strong, frequent, and obstinate convulsions, while the blood vessels experience an apparent though insidious state of tranquillity? Do we not also see a disordered secretion of bile, conjoined with a very regular and healthy secretion of urine? A profound drowsiness, succeeded by an obstinate wakefulness, a dryness of the tongue, with an absence of thirst, a sharp and burning heat in some parts, with an icy coldness in others, a gay delirium at the time when life is in the utmost danger, and a sudden transition by the patient from a state of indifference respecting his situation, to very gloomy forebodings, which are a constant source of terror to him?

"As intermittents, whether malignant or purely ataxic, have an affinity to adynamic fevers, and as the phenomena belonging to each of them are, in most cases, intermixed and complicated, it is proper to separate them from each other by means of analysis, in imitation of the learned school of Gottingen, in order to preserve a clear and distinct idea of them. Thus we must regard fetid diarrhœas, hemorrhagies that give no relief, a flaccidity of the limbs, and a loss of motion, gangrenes which occur on the extremities, &c. as

belonging particularly to the order of adynamic fevers; while restlessness, stupor, subversion of intellect, delirium, loss of memory, confusion of the senses, a sharp and rough voice, tossing of the hands, spasms, convulsions, &c. are the proper and characteristic symptoms of ataxic fevers. Even the solutions of these two kinds of fever are essentially different, as is judiciously observed by Baldinger *(Opuscula Medica)*, and by Professor Pinel, *(Nosographie Philosophique)*. It is known, indeed, that instead of the crises which usually mark adynamic fevers, the ataxic properly so called, are sometimes terminated by metastases towards the articulations and glands, by morbid affections more or less permanent of the sensibility of the cutaneous system, or by an impaired state of vision, of taste, of smelling, of hearing, &c. It may be laid down, then, as a general principle, that adynamic fevers consist in derangements of the mobility, while ataxic fevers attack and alter more particularly the sensibility of the system."

Dr. Caldwell is entitled to much praise for the attention he has bestowed on the translation of this work, and for the important addition he has thereby made to the stock of valuable books. There are few countries in the world where treatises on subjects of this kind are more interesting than in our own.

The review of the Appendix, containing an Essay on the pestilential, or yellow fever, as it prevailed in Philadelphia, in the year 1805, written by Dr. Caldwell, is deferred till our next number.

ART. 6. *Flora Carolinæensis; or, a Historical, Medical and Economical Display of the Vegetable Kingdom, according to the Linnæan or Sexual System of Botany, &c. By* John L. E. W. Shecut, *in two volumes, vol. i.* 8vo. pp. 579. *Charleston, (S. C.)* Hoff. 1806. *With five Engravings.*

IT might be supposed from the two first words of this title page, that a Flora of Carolina had been compiled by the author of the present volume. This, however, is not the case. His design is to give a display of the classification of vegetables, from the organs of fructification; and an enumeration of the orders appertaining to each class; then, skipping the genera or families, to explain the structure of the blossom and

its appendages, and to describe the leaves and other characters of plants with sufficient minuteness to enable the species to be determined. He also defines the principal terms employed in botany; recites the natural orders of Linne, and proposes a plan for the arrangement of vegetables, according to their operation upon the human constitution. Our readers will recollect that we announced it in our Hex. ii. vol. iv. p. 84.

This may be considered the scientific part of the work. It is not offered as an original performance, but as being "in the strictest sense of the word, a faithful collection or compilation, and methodical arrangement of all the plants hitherto discovered." The explanation of the Sexual System is, therefore, a repetition of what is found in the *Philosophia Botanica*, and the *systema vegetabilium;* and which has been thence transferred into the writings of *Lee*, *Rose*, *Rousseau*, and the numerous other expositors of the Swedish classification.

After devoting somewhat more than fourscore pages chiefly to those objects, Dr. S. proceeds to the main purpose of his work, which is an alphabetical enumeration of all the vegetables of which he has any knowledge, in the form of a dictionary. It might, therefore, have been entitled, "*Shecut's Botanical Lexicon, containing the class, order, genus, and species of all the known plants, with an account of the parts employed in medicine and the domestic arts, the sensible properties and medical virtues of each, and notices of vegetable poisons and their antidotes.*"

So copious are the materials, that the present volume goes no further than the word, "Fustic," which, we suppose, terminates the articles beginning with the letter F. The second volume will, of course, commence with G, and include all the remaining subjects to the end of the Alphabet. And, at the rate of execution which appears in the book before us, its successor will swell to a volume of unusual size.

As far as we can form an opinion of this body of vegetable materia medica, it appears to be an instructive and useful collection. And, though we discover no reason for denominating it a Flora of Carolina, any more than a Flora of New-York, yet we think it may be consulted with advantage by students and others, who seek for more extensive information.

We would suggest to the author, without however the least pretension to dictate, the propriety of omitting many of

the obsolete, foreign and uncouth names with which some pages abound, and which really terrify many well-disposed readers.

It would also be highly gratifying to the friends of science, as well as reputable to the author, if he would cite his authorities with more frequency, and direct the inquirers into nature to the original sources of knowledge. Such references would greatly increase the value of the work, and afford excellent opportunities to evince the learned researches of the compiler.

As friends to the design of Dr. S. we would offer him another hint, and this is, to omit all the species of plants which have not been discovered to possess remedial, dietetic, or economical virtues. He will thereby shorten his catalogue, and render it abundantly more interesting, by omitting articles which merely load the memory, and enlarge the nomenclature, without any practical use.

But we decline all further observations for the present. It will give us pleasure to see the sequel of this ponderous volume; and we earnestly hope Dr. S. will be favoured with health, patronage and industry to complete it.

ART. 7. *The Picture of New-York; or the Traveller's Guide through the Commercial Metropolis of the United States. By* a Gentleman residing in this City. 12mo. pp. 243. *New-York.* I. Riley & Co. 1807.

THE convenience and advantage of this manual must be apparent to every reader. The stranger and traveller, to whom every thing is new, will not only find much information in it, but much likewise to stimulate curiosity, and to direct and assist their further inquiries. Nor will persons residing in this city be without a share of advantage. They will find exhibited to view, an account of our topographical situation, and details concerning our municipal regulations, and a variety of other institutions, which can only be obtained by an extent of research, that, to most people engaged in business, would be irksome and inconvenient.

Considering the literary enterprise which our country has some time since begun to display, it is matter of surprise, that a performance like the present, should not have been sooner undertaken. Foreigners, either ignorantly or wil-

fully, offer to the public so many mistaken, distorted, and false statements concerning the United States, that it becomes a duty of patriotism, as well as an obligation of literary fidelity, to represent things as they truly are, and to do justice to the growing improvements of our country. We hope this example will induce persons duly qualified to favour the public with accounts of several other cities in the United States.

We cannot believe that the community will be insensible of the merits of this publication; or that they will so far neglect to encourage the circulation of it, as to prevent the author from supplying whatever may be deficient in another edition.

After giving a topographical description of the city of New-York, with its bay and harbour, and the north and east rivers, the author proceeds to offer a general account of the charter of the city—of the banking establishments—of insurance companies—of municipal regulations—of commercial institutions—of benevolent institutions—of markets—of the state-prison—of literary establishments—of senators and representatives in congress—of public amusements—of tours in the neighbourhood of New-York—of courts of justice—and of regulations for the preservation of the public health.

As a specimen of the execution of this work, we extract the following general view of the Health Establishment:—

"The system of regulations to preserve public health in the city of New-York, is established by an act of the legislature, entitled, "*An act to provide against infectious and pestilential diseases*," and certain other acts supplementary to it.

"These regulations respect the prevention and removal of nuisances in the city, and the examination and cleansing of vessels arriving from foreign ports. For the latter purpose, a quarantine station is assigned on Staten-Island, about nine miles from the city.

"By the provisions of the statute above-mentioned, a Health-office is constituted in the city of New-York, under the superintendance of three commissioners, respectively denominated the Health-officer, the Resident Physician, and the Commissioner of Health.

"The execution of the statute, so far as respects the prevention and removal of nuisances within the city, is committed to a *Board of Health*, consisting of the three commis-

sioners of the Health-office, and a committee of the corporation of the city, chosen for the purpose.

"The execution of the statute, as it respects the examination, detention and cleansing of vessels, is committed chiefly to the Health-officer, who is occasionally aided by the advice of the other commissioners of the Health-office.

"The regulations enforced under the statute may, therefore, be divided into *external* and *internal;* or into such as are designed to guard against *foreign* and *domestic* causes of disease.

"The *external* precautions comprehend the regulations of commerce and shipping. All vessels arriving from any part of the world, except the ports of the United States lying to the north-east of Sandy-Hook, between the first of June and the first of October, are strictly examined at the quarantine ground, and made subject to the directions of the Health-officer, under a penalty not exceeding two thousand dollars, or twelve months imprisonment.

"All vessels arriving from any place in the West-Indies, or the river Missisippi, between the first day of June and the first day of October, shall remain at the quarantine ground not less than *four days* after their arrival, and no intercourse shall be permitted during that period between the crews and the city, unless subject to such restrictions as shall be prescribed by the Health-officer; and such vessel shall remain at the quarantine ground for a longer term than the aforesaid four days, if, in his opinion, it shall be proper, under the penalty of two thousand dollars, or twelve months imprisonment.

"All vessels arriving from a place where a malignant or pestilential fever was prevailing at the time of departure; or if, during the voyage, any person has died, or been sick on board, with such fever; are absolutely prohibited from approaching the city nearer than the quarantine ground, until the first day of October, under a penalty not exceeding two thousand dollars, or imprisonment for a time not exceeding three years. No person arriving in such, or any other vessel, at the quarantine ground, is allowed to proceed to the city, nor is any part of the cargoes of such vessels allowed to be conveyed to the city, without a permit in writing from the Health-officer, under the same penalty.

"The Governor, or, in his absence, the Mayor, or, in the absence of both, the Recorder, may designate other descriptions of vessels that may become liable to quarantine, and

may prohibit or regulate the intercourse by land or ferries with all sickly or suspected places.

"For the sake of additional security, all vessels arriving from any port in the West-Indies, in South-America, in the United States southward of Savannah in Georgia, in the Missisippi, in the Mediterranean, in Africa, or Asia (except Canton and Calcutta), although no malignant or pestilential fever was prevailing at such ports at the time of departure, although no person had died or been sick on board with such fever and although the Health-officer, after examination, had given his permit to proceed, are prohibited from approaching within three hundred yards of that part of the island of New-York which lies southward of a line drawn from the house of William Bayard on the North river, to Stuyvesant's dock upon the East river, under a penalty not exceeding two thousand dollars, or imprisonment for a time not exceeding three years.

"The Mayor, or Board of Health, may order to the quarantine ground, or other place of safety, any vessel at the wharves, or in the vicinity of the city, which they may deem prejudicial to the public health, under the penalty of one thousand dollars; and when the owner, consignee, or commander of such vessel cannot be found, they may remove them at the expense of such owner, &c. The Board of Health may likewise order the removal of persons and things infected by or tainted with pestilential matter, to such place as they may think proper; and any one who resists in this respect, forfeits one hundred dollars.

"Many articles of a suspicious kind are particularly excluded. Hides are excluded between the first of June and the first of November, under the penalty of being sold for the use of the Health-office. Foreign cotton is prohibited within the same period; but that which is the produce of the United States is only excluded from that part of the city which lies south of Lispenard's meadow, and Ferry-street, near Corlear's-hook. Damaged coffee is specially prohibited.

"No communication with vessels at quarantine is allowed without special permit, under a penalty not exceeding two hundred dollars. Measures are adopted to execute the law on this subject with the utmost punctuality, and offenders will be most rigorously prosecuted. All sick persons of whatever description found on board such vessels, are conducted to the Marine Hospital, and there detained till their recovery

or death. All vessels found to be filthy, or even suspected to be so, are washed, cleansed, ventilated, and white-washed at the quarantine ground, and, in case of disobedience to the directions of the Health-officer in this respect, the master, owner, or consignee, is liable to a fine not exceeding one thousand dollars. All wearing apparel, bedding, &c. are washed and cleansed, or, if it be thought proper, destroyed.

" The foregoing may be considered as a summary of the *external* precautions. The *internal* precautions comprehend those laws and regulations which respect the removal of nuisances, and the preservation of cleanliness in the city, the principal of which follow.

" No dead animal shall be left exposed in any place within the first eight wards of the city, under the penalty of ten dollars.

" No pickled or salted beef shall be deposited in any place to the southward of Lispenard's meadow and Grand-street, between the first of June and the first of November, under a penalty not exceeding five hundred dollars, or imprisonment for a time not exceeding six months; nor shall any beef or pork be sold at auction within the said periods under the penalty of twenty-five dollars.

" Boarding-houses shall be kept neat and clean, and no more lodgers shall be admitted than the City-inspector shall think proper, under the penalty of twenty-five dollars for each person exceeding such number. The City-inspector or his assistant, shall likewise examine them at least once a week during the summer. Persons taken sick in boarding-houses between the first of June and the first of November, must be reported to the Health-office within twelve hours after they are taken, under the penalty of one hundred dollars, or six months imprisonment.

" All dirt and filth shall be brought out from houses, cellars, alleys, yards, and lots, on sweeping days before 10 o'clock in the morning, under the penalty of two dollars.

" Garbage, shells and offals, shall not be cast into the street, except on the morning of sweeping days before 10 o'clock, under the penalty of two dollars. Combustion of kitchen offals is earnestly recommended as the safest means to prevent the accumulation of offensive and putrefactive substances.

" No sexton shall inter any person who may have died of a pestilential or malignant fever in any place to the southward of Pump and Nicholas-streets, under the penalty of one hundred dollars; nor shall they inter any corpse within

the above limits, except in graves or vaults at least six feet deep, and without removing any other dead body or coffin, under the same penalty.

"No privy shall be emptied during the summer, except between the hours of eleven and twelve at night, and three in the morning, under the penalty of five dollars; nor shall any human excrements be thrown into any street, lane, alley, dock, &c. under the penalty of ten dollars.

"No new made ground shall be turned up during the summer under the penalty of one hundred dollars.

"Gutters shall be thoroughly scraped out and cleansed on sweeping days, under the penalty of two dollars.

"No noisome or offensive substances shall be deposited in any place to the southward of Grand-street; nor shall any pit for tanners and skinners, or pool of stagnant water, be allowed, except in Beekman's Swamp, under the penalty of five dollars.

"Manufactories which emit offensive smells may likewise be suspended by the Board of Health.

"No oysters shall be brought into or sold in the city between the first day of June and the thirtieth of September, under the penalty of two dollars for every hundred.

"Undressed skins, hides, blubber, &c. shall not be kept to the southward and westward of Catharine-street and the Fresh-water pond, under the penalty of ten dollars for every twenty-four hours neglect.

"Putrid and unsound provisions shall be destroyed, by starting them into the river, or otherwise; and no salted or pickled fish, except smoaked, shall be kept to the southward of Grand-street between the first of May and the first of October, under a penalty not exceeding five hundred dollars, or imprisonment not exceeding six months.

"Butchers shall bring no gut fat into the market, nor the head of any sheep or lamb, unless the same be properly cleaned, nor any sheep or lamb in carcase or quarter, with the feet or trotters thereto, nor any hides or skins, (calves' skins excepted) under the penalty of two dollars. They shall likewise immediately after killing any animal, destroy the offals, or convey the same into the river, under the penalty of twenty-five dollars. They shall not expose to sale any stale or unwholesome provisions under the penalty of ten dollars.

"Nuisances of every description must be removed or remedied, agreeably to the mode prescribed by the City-in-

spector, under the penalty of five dollars for every twenty-four hours neglect. And, in addition to the penalties prescribed in the cases of nuisances by the statutes of the State, and ordinances of the city, the remedies by common law may likewise be enforced.

" Any physician having a patient labouring under a pestilential or infectious disease shall forthwith report, in writing, to one of the commissioners of the Health-office, under the penalty of fifty dollars.

" The station assigned for quarantine, as was before observed, is situated about nine miles below the city, and on that part of Staten-Island which lies within half a mile of its north-eastern extremity. The shore gradually swells into the adjoining hills; and on the slope thus formed, lie the Marine Hospitals, consisting of a number of small detached buildings, and the houses requisite for the accommodation of the officers and others employed in the service. The buildings which constitute the Hospital are separated from each other, for the purposes of ventilation and cleanliness, and although constructed of wood, and generally of the height of only one story, are commodious and comfortable. They are sufficient to accommodate from 200 to 300 sick."

MEDICAL & PHILOSOPHICAL NEWS.

DOMESTIC.

Septic Acid formed on the Surface of putrefying Flesh.

A RESPECTABLE house-keeper of Bath, in breaking the small bones of a hare for jugging, that was highly tainted, scratched two of her fingers; in a few days they appeared inflamed, and were very painful; poultices, and a variety of applications were used, but the inflammation of the finger increased to an alarming degree, when an eminent surgeon advised immediate and profuse application of leeches, which effectually drew out the poisonous matter, and prevented the farther disagreeable consequences that were apprehended.

A similar circumstance occurred lately in the practice of a surgeon at Leeds, who, on dressing a bad sore in one of his patients, accidentally cut his hand with the scissars which he had used for that purpose. The infection was communicated in like manner, and for some time his life was despaired of.

Mr. Abernethy told Mr. Adams, that he never dissected the most recent subject, without having an ulcer in whatever part of the hands the skin is broken, and without his being conscious of any previous division of the cuticle. Mr. Jones, his dissector, fell a victim some years ago to this septic poison. Dr. Latham relates the case of a servant, who, on casing a putrid hare, brought part of it into contact with an agnail. The consequence was a local ulcer with swelling in the arm-pit, succeeded by an efflorescence in the skin, with fever, which proved fatal. Many other dissectors have sickened, and died in a like manner. Now, alkalies, by neutralizing the septic acid, prevent all these unhappy accidents.

Dr. Gilbert's experiments, related in the London Medical Museum, vol. iii. p. 172, prove the antiseptic power, both of fluid and solid ammoniac. They also prove the septic tendency of salt-petre and its acid, when added to putrefying blood and flesh.

Agricultural Enterprise at Poughkeepsie.

There is probably no county in the State of New-York better cultivated than Dutchess. In addition to a good soil, cultivated by skilful and industrious farmers, may now be reckoned the singular fertilization caused by gypsum. This excellent region is bounded by Westchester on the south, and by Columbia on the north. It is contiguous to Connecticut on the east, and washed by the Hudson on the west. In this part of the country there are many gentlemen who combine wealth, education, and taste, with practical agriculture. A number of these have associated and formed an institution, called "the Dutchess County Society, for the Promotion of Agriculture." This respectable body has already published a pamphlet of its "Transactions." Its object is to collect and preserve facts and observations in agriculture and rural economy, and to detail those of the most approved foreign works in a cheap form. And it is intended that this first number shall be followed by a second in six months, and be continued half yearly thereafter. When we inform our readers, that Dr. Samuel Bard is the President of the Society, and that John Johnson, Henry Livingston, and William Broom, Esqrs. are members of the publishing Committee, we are confident they will entertain a highly favourable opinion of the society, and wish success to the laudable efforts of its members to collect and diffuse agricultural knowledge.

Thoughts on Poughkeepsie, as a Site for a Navy-Yard. By Henry Livingston, Esq. In a Letter to Dr. Mitchill, dated Poughkeepsie, January 6, 1806.

"A naval yard at Poughkeepsie would be perfectly secure from foreign hostility, as being completely north of the Highlands. Any spot south of these important passes is as much exposed as the yard at New-York. The village of Poughkeepsie is large enough to accommodate any number of workmen. A fertile country is in its rear, and its markets are plentiful and cheap; the channel of the Hudson meets the very shore, and the formation of the latter in many places, is perfectly suitable for the construction of vessels of any size. The depth of water from this place to Verplank's point, is from 14 to 30 fathoms; in Haverstraw and Tappan bays, to be sure, it is more shallow; yet that a 74, not in ballast, might be safely floated to the ocean is evident, when it is considered that during the late war a Bri-

tish 64 lay for some time opposite Peekskill. I think it was the Centurion.

" In addition to all this it was urged, founded on the opinion of many respectable and well-informed gentlemen, that a capacious dry-dock could, without enormous expense, be constructed at the upper landing in this town, where the Fallkill meets the waters of the Hudson. Those gentlemen alleged, that a permanent tight dam might be constructed on the verge of the flats, so as to include a bay of upwards of two acres. Through the gate a channel could be dug in the mud to any depth. Suppose a 74 gun ship wanted repairs; at high water let her be entered in this channel; shut the gate, and with the water of the Fallkill fill the bason sufficiently to float her to any part of it; then, by diverting the course of the stream, and shutting the gate at low water, the residue to be pumped out could not be great, and the ship would lie perfectly dry. When it should be proper to refloat this, or a new built ship, again turn in the stream, and fill the cove to the convenient height.

" This business will not be deemed very Utopian when it is considered that the Fallkill is considerably larger than the stream at the Yonkers, and that it is precipitated in a cataract of at least 80 yards, when it joins the tide-water, and may, with ease, be made to take almost any direction.

" It might be added, that during ten months in the year, timber might be wafted from the ocean to this place, and, during nine months, from the Sacondago and the Scaroon branch of the Hudson."

Hybernation of Chimney Swallows in hollow Trees.

The following facts concerning Chimney Swallows were received from Capt. Daniel Greene, of New Lebanon, in Columbia county, New-York, by Mr. H. G. Spafford, of Hudson, June 7, 1807, and by him communicated to Dr. Mitchill. Capt. Greene is an old respectable and intelligent inhabitant of the town where he resides, and his farm lies contiguous to that on which the swallow tree stands.

About two and one-half miles north of the pool at New-Lebanon is a tree called the *Swallow Tree.* It grows on the farm of Mr. Abraham Harrison. The proprietor has known, for eight years, past that this tree has been the winter-residence of swallows. It is a green elm of more than three feet in diameter; it is hollow. The only passage for the swallows into its cavity is through an opening, forty feet from

the ground. This aperture is about three feet one way, by eight inches the other, and was caused by the splitting of a large bough from the trunk. The elm stands in the wood, near improved land. The hollow appears to extend nearly down to the ground.

On the 11th of May, 1807, the swallows were, for the first time that season, discovered by accident, flying about in great numbers. None were then observed to be torpid. But from every circumstance noted by Capt. Greene, and by Messrs. Booge, Spring, Harrison, Frink, Sanford, Torry, and others, there is reason to believe they remain torpid during the winter like bees.

With the increase of warmth in the morning the swallows leave the tree, circling and sporting about until evening, when they return; but in cool weather they go out and return several times in a day, making but a short excursion. He has seen them do this five times in one day, resembling the swarming and returning of bees. Mr. Harrison has observed that they continue during the cool weather of autumn to gather, house, and disperse themselves in the same manner as in the spring. On the approach of a shower they collect and return; and, on these occasions, pour into the tree in such numbers as to resemble a column of water. On the appearance of an impending shower, a few days ago, he went to the tree, in company with several of the before-mentioned gentlemen, and some thousands collected. But their numbers have been remarkably diminished since their last gathering, and indeed very few now appear at all. None of these persons, however, doubt, that this is the place of their winter quarters. Their opinion was, that the numbers would fill several barrels with swallows. There is no dung, filth, or unusual appearance about the tree.

This appears to be a decisive proof that the chimney swallow hybernates in hollow trees, but the difficult question still remains relative to the *bank swallow* and the *barn swallow*. Do these birds, or either of them, plunge under water in autumn, and pass the cold season in the mud?

Destructive Action of Copper upon Iron, in the Construction of Ships.

Experience has proved, that if a ship's bottom is covered with copper, the bolts, nails, and spikes which connect the lower timbers ought likewise to be copper. Bolts of *iron*

gradually disappear, and exhibit marks of deep corrosion. In the course of time the iron will be entirely eaten away, and the connection of the timbers be proportionally weakened. To avoid this accident, it has now become universally the practice to hang the rudder upon hinges wholly made of copper, or entirely of iron, and not partly of the one metal, and partly of the other; and when a ship is sheathed with copperplates, it is found necessary to fasten them on with nails of copper, and not of iron. If those of the latter kind are employed, they last but a short time, and the sheathing is loosened much sooner than it ought to be.

What is the chemical theory of this? The operation seems to depend upon the stronger attraction which acids have for iron than for copper; as in the case of sulphate of copper, (blue vitriol) for example, which is decomposed by iron; the sulphuric acid combining with the iron, and forming a sulphate of iron (green vitriol or copperas) and the copper being precipitated in its metallic state; so the copper of a ship's bottom, when exposed to ocean water, soon turns green, probably by a combination with muriatic acid, or other predominating acidity of the ocean. This greenness proves that ocean water acts upon copper and dissolves it. The leakage of the ship must pass through the metallic sheathing, and, of course, be impregnated with copper; consequently all the bilge-water within a coppered vessel, is a solution more or less strong, of that metal in sea or salt-water; and as she rolls from side to side on the waves, this cupreous mixture is applied to a proportional extent of her internal surface, along the planks and upright timbers. By this means the muriate (or sulphate) of copper, is enabled to penetrate every crack and aperture, and to moisten every connecting bolt, at the place where it passes from the planks to the uprights. At these points the iron is so much corroded in the course of a few years as to weaken the ship, and to put her in danger of falling to pieces.

The destructive action which copper and iron thus exert upon each other, is verified by the rapid corrosion and decay of such copperplates as contain a mixture of iron in their composition. When these are applied for sheathing the bottoms of vessels, they last but a very short time. The copper, as the workmen say, eats up the iron; therefore, in purchasing copper for this use, great care should be taken to get that which is perfectly free from admixture with iron.

When iron is found within the reach of this new com-

pound, the acid unites with it into a muriate (or sulphate) of iron, and discharges the copper in its reduced or metallic forms. This precipitate of copper, consisting of small particles, with very little cohesion, is washed away, or left to concrete around, while the muriate (or sulphate) of iron, possessing no greater attraction, turns to rust, or salt, in the same manner. And thus the hostility of copper to iron in the lower works of ships may be accounted for.

Mexican Mineralogy.

It may be fairly questioned whether any part of America has been so much the subject of mineralogical research as Mexico. The mines with which that country abounds have prompted the Spaniards to explore it with great care. Chemistry has been encouraged, particularly in its application to the analysis of ores by public authority; and a seminary of mineralogy may be reckoned among the existing improvements.

For this scientific and practical institution, Don Andros Manuel del Rio has translated into Spanish, the *Mineralogical Tables of Mr. Karsten*, counsellor of mines to the king of Prussia. This was printed at the city of Mexico, in a small folio volume, during the year 1804. The tables are divided into six parts by perpendicular lines. The first, second, third and fourth, contain the class, order, genus, and species of the minerals. The sixth contains their component ingredients, according to the latest experiments.

But in the *fifth* column, Mr. Del Rio has given a valuable specimen of mineralogical topography. There he has noted the region or district of Mexico, in which the minerals described in the European works have been discovered; and where his own observations are defective, he leaves blanks to be filled up by the students and others. In this manner it may be expected, that in a few years the minerals of Mexico will not only be known, but also the spots where each of them can be found. To the tables are added, the explanatory notes of Mr. Karsten, to which Mr. Del Rio has made large and valuable additions of his own, on many species of the four classes of *earths*, *inflammables*, *salts*, and *metals*, into which it is distributed.

To these tables is added a classification of Rocks, which are arranged under six great heads: 1. The *primitive*, such as granite, gneiss, serpentine, porphyry, and quartz: 2. *Secondary*, slate, limestone, and vacia gris; 3. *Exterior or*

covering Rocks, ancient and modern; sand stones, sal. gem. ancient and modern; gypsum and chalk: 4. *Traps*, of which basaltes and coal are instances: 5. *Alluvial Rocks*, such as, brecchias, lavaderos, &c. 6. *Volcanic Rocks*, comprehending lava, piperino, and other productions of fire. To give our readers a further idea of what Mr. Del Rio has done, we mention that he has enriched his book with an account of the new fossils described by Mr. Hauy in his mineralogy. Throughout the whole, the Mexican author has availed himself of the information imparted to him by the distinguished traveller Van Humboldt.

Mr. Del Rio also published, in Mexico, during 1805, the second part of *Elements of Oryctology, or the Knowledge of Fossils, disposed according to the system of Mr. Werner*, in octavo. This, like the former, was done for the royal school of mineralogy, and is embellished by three geological plates, illustrative of Humboldt's ideas of the structure of the earth.

American Ore of Titanium.

A very curious ore of Titanium, one of the newly-discovered metals, has been found to exist in New-Jersey. A specimen of considerable size had been presented several years ago, by Mr. Aber, to Dr. Mitchill, as an ore of zinc. But it not appearing to him to be an ore of zinc, and, indeed, his mind remaining rather uncertain what it truly was, he laid it aside in his cabinet, and, at length, furnished Professor Bruce with a part of it. This able mineralogist has not only made it the subject of experiment himself, but has taken the opinion of some of his chemical correspondents in Europe upon it; and it is their united opinion that it is composed chiefly of the oxyd of titanium, combined with that other form of the metal which, from its having been found in the valley of Menachan, in Cornwall, England, has been called Menachanite.

A further account of this remarkable substance is contained in a letter, from Professor Woodhouse, to Senator Mitchill.

"The following experiments were performed upon the mineral found in New-Jersey, which I received from you in the year 1805, which was then supposed, by the person who presented it to you, to be an ore of zinc, and which Count Bournon has declared to be composed of iron and titanium.

"The specific gravity of this mineral is 5. 28. When viewed, it has the appearance of black spots, the size of duck

shot, surrounded by a red substance; and streaks of a white powder, which is lithomarge, are dispersed through it. Upon looking at it through a microscope, a crystal of titanium was seen adhering to it. One hundred grains of it, reduced to an impalpable powder, and exposed one hour to the intense heat of an air-furnace, lost fifteen grains in weight, and from a brown, was turned of a black colour.

" One hundred grains of it, submitted to heat in the same manner with charcoal, produced a great number of small globules of pure iron. This metal can be separated from the powder by a magnet.

" One hundred grains of it, boiled in aqua regia, was totally soluble in this agent, which proves it contains no silex.

" The Prusiate of pot-ash, added to this solution, yielded a blue precipitate, which, when dried, weighed three hundred grains. Now, if we divide this sum by six, we shall have the quantity of metallic iron in the hundred grains of the ore, which is fifty.

" A portion of lime was thrown down from a solution of the mineral, in aqua regia, by the oxalate of pot-ash. Carbonate of ammoniac, and a solution of pot-ash, produced a copious white and gelatinous precipitate.

" One hundred grains of it were mixed with six hundred of pot-ash, and submitted to intense heat one hour, in a black lead crucible. The part remaining in the crucible was powdered, boiled in water, and filtered. Upon adding a small portion of muriatic acid to the water, a white precipitate was thrown down, which was supposed to be the titanium. Upon collecting it, and mixing it with a small portion of spermaceti oil and charcoal, it was exposed to the heat of a blacksmith's forge, when nothing was obtained but a shining heavy black substance, of the appearance of glass.

" When the muriatic acid was added in excess to the filtered water obtained, by boiling the residue, which remained in the crucible, in water, no precipitate was produced, until a solution of pot ash was added to neutralize the acid.

" The solution of the mineral in nitric acid, is astringent to the taste.

" The ore appears to be composed of iron, titanium, lime, alumine, and no silicious earth.

" I wish you to inform me in what part of New-Jersey I can procure some of the mineral. Have you any to spare of the specimen in your possession? for I wish to continue the experiments upon it.

Barlow's Columbiad; a National Poem, in Honour of our Western Hemisphere.

There can be no danger of offending any votary of the American muse in mentioning Joel Barlow as a great poetical genius. At an early time of life, and about the close of the Revolution, he published "the Vision of Columbus," a poem of great merit and excellence. From that time to the present, a term of more than twenty years, the active mind of the author has been engaged in revising and enlarging his original design. All that his own fertile fancy and intellect have supplied, and every thing that long residence, and travelling in the most polished parts of Europe could furnish, have been embodied in that work. It has, consequently, been much improved and extended, and, in this new form, has received from the author the new title of "the Columbiad." It has now assumed the structure and finish of a regular poem, and, we doubt not, will give Mr. B. a well-deserved place among the best epic writers.

Ever since his return from Europe, Mr. B. has been engaged in preparing for the public, an American edition of the Columbiad. It is now printing in Philadelphia. The sheets we have seen, evince fine typographical execution. The paper is of an elegant texture, and made expressly for the work. The type is new, fair, and cast for this special purpose; and the size of the volume will be quarto.

In addition to all these circumstances relative to the matter and form of the Columbiad, the author intends to embellish it with a number of highly-finished prints. These have, within several years past, been preparing in London. The paintings were chiefly done by Mr. Smirke, of the Royal Academy of painting, and the engravings by Ankersmith, Goulding, Bromley, Raimbach, Cromek, Neagle, Heath and Sciavonetti. Some of the plates represent real, and others allegorical scenes. Of the former, that of Manco Capac and his wife Oella, instructing the Peruvians in the arts of agriculture and spinning; of Cornwallis's resigning his sword to Washington, after the surrender of the British army at York-town; of the murder of Lucinda, at Fort Edward, by the savages, during Burgoyne's expedition from Canada into New-York; of Julius Cæsar on horseback, declaring war upon his country, by passing the Rubicon; and, lastly, the frontispiece by Fulton, representing Mr. B. himself in a sitting posture, with a sheet of manuscript in his hand, appear to us to be done with great taste and exactness.

Of the latter, we beheld with more than common admiration, the print, where Hesper, the guardian genius of the western world, appears to Columbus in prison; where a saporific draught is poured by Medea, into the mouth of the dragon that guards the golden fleece; where cruelty is more expressively personified, and represented as presiding over the British prison ships; and the poor victims are seen extending their arms through the gratings; where bigotry, with a crucifix and dagger in the right hand, and a torch in the left, is setting fire to a pile for burning heretics to death; where the mysteries of Isis are disclosed to one of the initiated; and, finally, where mankind eventually surrender their prejudices at the throne of reason.

The progress already made in preparing this splendid work for the public eye, encourages an expectation that it will be soon completed, and laid before the expecting and impatient citizens of the United States.

Webster's Dictionary, and Grammar of the English Language.

American literature has certainly received substantial benefit from the labours of Noah Webster. His *Institute* and *Dissertations* were early and respectable proofs of the proficiency he had made in the study of his native tongue. More recently he has laid before the public, a *Dictionary* and *Grammar* of the English language. With indefatigable labour he has already pushed his researches beyond any of his countrymen, and although he has done so much, seems fully qualified to perform abundance more.

Mr. Webster published his Dictionary in 1806. He had been many years engaged in its compilation, and has enlarged it by an addition of five thousand words more than are found in the best British compends. He has prefixed to it a learned Preface, in which he traces our words to the Gothic and Saxon roots, with remarkable ability. In doing this, he displays the structure and constitution of language, and demonstrates several mistakes of Lowth, Johnson, Murray, and certain other great grammarians, in the nice employment and meaning of words. In orthoepy he has reviewed the pronounciation of Sheridan, Walker, and Jones, and bestowed on their respective modes, many acute and valuable remarks. In short, we do Mr. W. but justice in placing him among the most able philologists of our own or of any former time. And we constantly keep his Dictionary at hand for extemporaneous use.

Mr. W. published his *philosophical* and practical Grammar in 1807. In this he has adopted the lucid analysis of the English language first attempted by Mr. Tooke. Accordingly, he has divided the words which compose speech into two classes, the PRIMARY and the SECONDARY. These, in the whole, amount to seven. 1. The NAME, (or Noun.) 2. The VERB. 3. The SUBSTITUTE, (or Pronoun). 4. The ATTRIBUTE, (or Adjective). 5. The MODIFIER, (or Adverb). 6. The PREPOSITION. And, 7. The CONNECTIVE, (or Conjunction.) Of these the name and the verb are primitive parts of language, and all the rest derivative. The *article* is denied to be a distinct member of a tongue, because, on tracing the subject, it is found to be an *attribute*, though sometimes employed as a *substitute*. The PARTICIPLE is only a part of the verb. The *interjection* being the refuse of all language, is not mentioned at all as a distinct member of speech. The sounds classed under that title *he* calls *Exclamations*.

The section on PRONOUNS, (or Substitutes) is an exquisite piece of grammatical discussion; and the remarks upon *it*, *this*, *that*, *these*, *those*, *which*, *what*, *as*, *so*, *both*, *same*, *many*, *few*, *all*, *any*, *first*, *last*, *former*, *latter*, *less*, *least*, *more*, *most*, *such*, *self*, *own*, *one*, *other*, *another*, *none*, *several*, *some*, *each*, *every*, *either*, *neither*, *hereby*, *thereby*, and *whereby*, considered respectively in their signification, as pronouns, evince a profound acquaintance with the English idiom, and its parent the Saxon.

Erudition and ingenuity are united in the section and notes upon Adjectives, and they pour upon the *attributes* light enough to enable us to see them as they ought to be seen. The like may be said in the main, of his analysis of verbs, which, notwithstanding their complication and variety, are unveiled with singular skill. Whether he considers them in their transitive, intransitive, or passive forms, or with their tenses, modes, verbals, and auxiliaries, his survey is clear and intelligent. On the remaining parts of speech, as well on Syntax as Prosody, his rules and observations are, many of them, new, and worthy of attention. It would be easy to enlarge on this subject; but a book of so moderate a price, and so popular a nature as this, will readily find its way into the libraries of literary men, and, we hope, into common schools and colleges: by them it will be duly perused and appreciated. In the mean time,

we present our readers with this concise account. As friends to literature, we gladly seize the opportunity to express our conviction of Mr. W.'s merit as a scholar, and our apprehension, that much as he has been distinguished, his celebrity is nevertheless unequal to his deserts.

Fulton's artificial Torpedo for destroying Ships.

An important and successful experiment has been made at New-York, on the practicability of destroying a ship, by conveying gun-powder under water, and exploding it beneath her bottom.

The inventor of this method of attacking vessels of war is the ingenious Mr. R. Fulton. His apparatus consists of three principal parts; 1. A water-tight chamber of brass, occupying not much more space than an octavo volume, and containing a gun-lock to produce fire by collision of flint with steel. 2. A cylindrical vessel of copper, capable of containing seventy pounds of gunpowder, or any other requisite quantity. It is firmly screwed to the chamber containing the fire works; and, from the pan where the gun-powder is first kindled, there is a direct and near connection with the whole magazine contained within the copper cylinder. This part of the machinery must also be perfectly impassable by water. 3. A harpoon, or barbed dart, of about three or four feet long, to which a cord of about seventy feet in length is attached. This cord is tied fast to the cylinder, and must be strong enough to hold the apparatus without breaking when a ship is under sail, and moving through the water, as also to keep the apparatus in its proper place when carried under the bottom of a ship at anchor by a current.

The two former parts of this machinery are sufficient for the destruction of a vessel lying at anchor in a stream. For two of the *carcases* or *torpedos* being tied, one at each end of a line, one hundred and fifty feet long, are to be rendered sufficiently buoyant by cork or pine, and set adrift at some distance a-head of the vessel. They are then carried down by the current, and the middle of the line being stopped by her cable, the torpedos swing along the sides, and, by the force of the stream, are carried under the bottom. There the machinery of the lock, having been previously so graduated as that the clock-work should disengage the main-spring in a given number of minutes or seconds, the whole mass of gunpowder explodes, and the vessel is blown to pieces.

If a ship is sailing, and making progress through the water, Mr. F. proposes to harpoon her near the bows. The harpoon may be shot from a wall-piece or blunderbuss.

Experiments made by Mr. F. and Captain Whiley, at New-York, have proved that a barbed javelin or harpoon, carrying a line fastened to the other end of it, may be shot from a gun, and made to penetrate timber to such a depth, as to require cutting out. The harpoon being thus shot into an enemy's ship from a convenient gun, affords a point of suspension and direction for the firelock and carcass that are to do the intended service. For this purpose, the latter are connected to the other extremity of the line which the harpoon carries with it. As soon as the harpoon is found to be fast, the torpedo, ready charged, and having the clock-work of its lock duly graduated and put in motion, is thrown overboard. Immediately it is drawn by the ship's motion toward her, and, if her course is rapid enough, it will descend toward her keel. The explosion taking place there at the time calculated, tears the ship asunder.

A third method of rendering these engines of destruction formidable to an enemy, is to anchor them in a state of equilibrium between the surface and the bottom, in any strait or channel through which the enemy intends to pass. The water-tight apparatus may remain in such situations for weeks or even months; and the number of them may be increased to any extent; for dozens, scores, or hundreds of these artificial torpedos may lurk under water, and be ready to give a terrible shock if touched. When employed in this manner, the chamber contains no clock-work within it; but there is a lever on the upper and outer side, which, on being moderately pressed, acts like a trigger, and strikes out the fire of explosion. The consequence is, that if the bottom of a ship should be brought into contact with this fatal lever or trigger, she will instantly be blown to shivers. In sailing through a strait, like the Narrows at New-York for example, several ships, of an hostile squadron, might be expected to strike on the torpedos anchored in various places there, be rent into thousands of fragments, while their crews would be destroyed to a man.

Such is the plan of Mr. F. which, if fully carried into execution, bids fair to put the weakest maritime nations on a footing, as respects naval strength in ports and harbours, with the strongest. And to evince the feasibility of his project, he actually blew up, on the 20th of July, 1807, a brig of more

than 200 tons burthen, that had been purchased for the purpose. In times of uncommon peril, and of unprincipled warfare, it becomes the American people to make early preparations for their own defence. The torpedo promises to be a formidable means of annoyance to an enemy who shall enter with ships into our harbours. And there are various other modes of employing it than are here mentioned.—As soon as the explosion took place beneath the vessel selected for the experiment above mentioned, she was wrecked and torn into numberless pieces, and her hull and ballast instantly went to the bottom. And lest it should be said she was a mere rotten hulk, the precaution was taken of having her surveyed before-hand, and the carpenters who examined her pronounced her timbers to be sound, and that for a few hundred dollars she might be repaired sufficiently for a West-India voyage.

To this description of the machinery, and account of the destruction of a vessel by its explosion, we add a few reflections, which were furnished by a sensible correspondent, on the subject:—

"When the pursuit of any art or science is of such a nature, that the artist can prosecute it in his laboratory or closet at a small expense, and with little assistance, it has every chance of arriving at rapid improvement; and the demonstration once made, immediately becomes familiar to men of science and to the world. But when a discovery requires heavy expenses, and the conviction of the public mind is to be prosecuted to perfection, and rendered useful to mankind, the artist has every difficulty to encounter. 1st. The expense, which may not be within the limits of his private purse. 2dly. The difficulty of inducing others to aid him in the expense. 3dly. The difficulty of proving his principles to the conviction of common understanding. 4thly. The difficulty of convincing the world of the utility of his invention. And, 5thly. To guard against interested persons preventing his invention being introduced into practice. All this Mr. F. has had to encounter; but by unremitting perseverance for eight years, he has, within that time, acquired funds to make experiments, which have cost, I am assured, upwards of thirty thousand dollars. Besides the invention of the torpedo, has constructed a submarine vessel, with which he navigated, under water, with three persons; which vessel could, on the surface, perform all the movements like a common sloop or sail-boat, and, when necessary, could plunge under water, and there continue from three to seven hours,

and move about in every direction. This fortunate experiment now leaves no doubt on any rational mind as to the certain annihilation of all vessels which may come into contact with the torpedos. And out of this experiment, so interesting to America, and the harmony of nations, arises a succession of reflections of the greatest importance.

" Having proved the power of submarine explosion, and so arranged the torpedos, that, by certain and simple operations, they must, from necessity, run under the bottom of the vessel near to her keel, and where the explosion, being perpendicular, must pass through her body; it is easy to conceive that by practice the modes of attack will be improved, like all other inventions, and, in time, arrive at perfection. To make the attack with such engines much has been said of the risk which boats would run, and the danger of the men. But when boats attack a ship with the view to boardage, and which has succeeded in hundreds of cases, the men run an infinitely greater risk than in placing the torpedos in the right position over the bow of the vessel to be assailed; for boardage is a work which must be fought arm to arm; the vessel's sides must be mounted, and the contest is sometimes of an hour's duration; whereas, to place the torpedos within the range of musket shot is not the work of two minutes. In such an attack, the boats risk a few men; the vessel attacked risks her complete annihilation, with that of her whole crew. This immense disparity in chance strikes terror into the assailed, and gives courage to the persons commanding the boats; for what are all the courage and enthusiasm of war, but calculations on superior advantages? Hence, to what does this invention of submarine attack lead, if not to the annihilation of all ships of war? Is it to be supposed, that nations will agree not to use such engines? Will the minor maritime powers not use them against the stronger, to obtain that liberty of the seas they so much desire? It would seem that this invention would lead to a great revolution in the affairs of man, to the liberty of the seas, to free commerce, lasting peace, and a more rational understanding among nations.

" It may be expected that our government will immediately adopt it for our defence, and extend our privilege and practice of it to other nations; that they may understand its powers, and by wise negotiations, avoid the destructive consequence. It has been said that Mr. F. has already proposed his invention to the French and English governments; but,

I am assured from the best authority, that what he did in France was little more than a succession of experiments, to discover right principles of action, which being in themselves difficult, were not so perfected as to be rendered useful, when he left France and went to England; there he brought his engines to greater perfection, and exhibited some of them to the late prime minister, Mr. Pitt, who was so well satisfied, that he ordered torpedos to be constructed to the amount of ten thousand pounds sterling. When Mr. Pitt died, and the new ministry was formed, they decided against introducing into practice a powerful mode of attack, which, as they commanded the seas, they did not want, and which might be turned against them. This, I am assured, is the fact, and a fact which speaks loud in favour of the invention. It may now be said, Why has the inventor thus acted with the French, English, and American governments? The answer is simple and plain. Mr. F. considers military marines or navies as the most horrible of all systems of oppression: he considers the liberty of the seas as the right of all nations, and one of the most important of all events for the civilization of mankind. Hence, military marines must be destroyed, and the system for destroying them could only be well introduced in the countries where they existed."

French's useful Inventions.

Among the inventions and improvements in the arts which attract the public attention, are the following machines and instruments of Mr. Daniel French, an inhabitant of the city of New-York: A method of rigging ferry-boats, so that when the wind is too high they will shorten sail of themselves. A moveable threshing machine, to be worked by horses or oxen. A machine for dressing flax with great dispatch. A simple instrument for picking up apples under the trees. A plough for cutting ditches. A cheap and easy way of elevating water for live stock or family use. A machine for expediting the manufacture of blocks and shives for vessels; another for dressing shingles; another for shaving and jointing staves for cooper's use; and likewise one for making oakum out of junk and old rigging.

All these inventions are ingenious, and some of them have already been proved to be useful, and well adapted to their objects.

Prejudice in the South of Europe concerning the Contagion of Plague.

When errors have been for ages rivetted upon mankind, and acquired the force of habit, they become extremely difficult to remove. The opinions and practices relative to the plague along that small part of the Mediterranean sea yet held by the Christian nations, are full confirmations of this remark. The governments of these countries are as zealously bent on keeping away foreign contagion by quarantines and lazarettoes as ever. And the people seem to be full as much misled as their rulers. We are led to these remarks by an Italian prospectus for publishing at Siena, in Italy, a work of Professor GIACOMO BARZELLOTTI, entitled, *Polizia di Sanita*, or *Directions for avoiding all Suspicion of Contagion, and for attacking and destroying Diseases, howsoever contagious and pestilential, without hazard to life, health, or the public or national interests.* The work is intended for the use of health officers in ports, lazarettoes, and hospitals, as well as for physicians in general, and magistrates. The editor promises something more than has been done by *Papon*, *Foderè*, and *Mahon*, in their respective publications; and intimates, that the work he announces will bear considerable resemblance to the *Governo della Peste* of *Antonio Muratori*, but be much more minute and comprehensive.

Description of an American Hail-Storm.

The remarkable congelation of water in the atmosphere, during the conflicts of certain currents of air, is one of the occurrences in meteorology that has not been hitherto well explained. The following account of a terrible hail-storm, which happened on the 15th of May, 1807, in Person county, North-Carolina, will furnish matter of reflection to the interpreters of nature. [For Mitchill's Theory of Hail, see Med. Rep. Hex. i. vol. iii. p. 81, et seq.]

"The day appeared unusually sultry, sometimes cloudy. About 4 o'clock in the afternoon a very angry sky appeared to the south, which was presently followed by a tremendous wind and rain, which lasted but a short time, when a still more angry and terrible cloud rose in the north, and from which fell hail-stones in such numbers and so large, that they levelled every thing with the earth. In a few moments the ground was covered with hail-stones of different sizes, some as large as hens' eggs, others larger, and some

even as large as a goose egg. You may have a just conception of their size when I inform you that some were in circumference eight inches. There was a horse-race on the same day in this neighbourhood, at which there was a considerable collection of people, who had not entirely dispersed before the storm came on. There being but one old log-house on the race-ground, they all sought shelter in that, which, being badly covered, did not prevent them from being pelted and much bruised by the hail-stones. One man in particular left the house in pursuit of his horse, that had broke the bridle from the severity of the hail, and being so entirely exposed to the storm, you may well imagine, from the size of the hail-stones, what was his fate. He was in a moment prostrated on the ground, and as fast as he rose the hail beat him down again. After great exertion, and receiving considerable damage to his person, he at length reached the house. Every horse on the ground broke his bridle, and ran to and fro in wild confusion. Even the horses were much injured, and all kinds of small stock were killed, such as pigs, lambs, &c. The stones broke all the window glass on the north side of the houses, even many of the window sashes were destroyed. Trees of every kind are stripped of their leaves, and very much barked. This storm not only destroyed our orchards, but the mast, of which there was an abundance. I do not know how far it extended north and south; but as far as I have heard either way it was fatal. The devastation was about four miles in width, within the limits of which, wheat, oats, and all kinds of vegetation are destroyed. The woods now look dreadfully. The green leaves, just dying, create a most unpleasant scent. To the industrious farmer it is a lamentable circumstance to see, in a moment, his first and best wishes blasted, and his labour destroyed. I never witnessed so desperate a storm. It is, however, well for us that it happened so soon, for if the season had been farther advanced, our corn would have been sacrificed also. This is Wednesday (20th) and some of this hail is yet to be found in bottoms sheltered by north-hill sides. The storm lasted about a quarter of an hour, in which short period the whole face of nature in this vicinity was changed, also its fruits destroyed."

Vaccine Medal.

In February, 1807, a silver medal was delivered to Dr. Valentin, of Marseilles, by Thibadeau, the Prefect, in behalf of M. Champagny, the minister of the internal department of France, as an honourable testimonial of the sense entertained by the government, of his services and merits in promoting the inoculation of cow-pox. The figure of the Emperor is on one side of the medal, and the Doctor's name and titles on the other, with this inscription, *Societè Centrale de Vaccine.* Among the discoveries of this accurate and practical observer are these, that the vaccine matter may be communicated from human beings to she-asses, she-goats, sheep and dogs; and, from these animals, back to man again; the vaccine contagion preserving itself in full energy during all these operations, and retaining the power of securing against the small-pox in the most effectual manner. In an elegant address delivered by Dr. Valentin on the occasion, he states, that vaccination has made excellent progress among the Marseillians.

Philosophical Fishes. An amusing Experiment in Hygrometry.

The attraction between porous substances and water is perfectly familiar. The moistening of paper, the softening of sponges, the shortening of twisted cords, the tightening of doors, and the swelling of drawers during damp weather, are instances of the penetration of the humidity of the atmosphere into the pores of those several substances. By the insinuation of water among their particles, they swell and occupy more space than before.

Of the bodies upon which experiments have been made, next to the beard of the wild-oat, the horny parts of animals appear to be the most delicate tests of moisture. Shavings of horns, in particular, afford very sensible indications of the presence and removal of aqueous vapour. And hence it is, that a filament of whale-bone, a horny substance, forms one of the best, if not the very best hygrometers that philosophy has discovered.

By virtue of the ready and perceptible operation of atmospheric water upon the scrapings of horn, an entertaining little experiment has been contrived. This is done by cutting a horn-shaving into the form of a fish, which being laid upon the palm of a warm and moist hand, moves, bends, turns over, and imitates the spasms and contortions of a living

fish just taken out of water. The insensible perspiration of the hand entering into the lower side of the artificial fish, expands and dilates it; while the upper side, being exposed to the cooling and drying atmosphere, shrinks and contracts by evaporation.

Thus acted upon by the moistening process going on below, and by the drying operation above, the head and tail of the little fish are elevated and bent so as to approach, and sometimes even to touch at their extremities. Various motions, resembling the agitation and convulsions of a dying fish, take place. The artificial thing gets on its belly, and frequently turns quite over on the other side; and then the agency of the same cause continuing, it bends, writhes, gets up, and turns back again.

It is said these curious artificial fishes were first brought from Canton in the ships belonging to Salem, in Massachusetts. An ingenious artist at the latter place soon dicovered the method of imitating the Chinese productions. And their singular and entertaining qualities induced the Hon. Mr. Crowninshield, representative to Congress, to carry some of them to Washington, to gratify the curious, in 1805. At that time, the *philosophical fish* was entirely novel, and quite a phenomenon. Every body wondered at its strange motions, imitative of life; and speculative minds were engaged in framing hypotheses to explain them by animal magnetism, galvanism, and electricity. It was about that time that the following notes passed between Dr. Mitchill and that gentleman.

" S. L. M. being desirous of learning every thing of importance relative to the fisheries of the United States, begs information from his friend Crowninshield, concerning the singular species of fish lately brought into the Salem market. If possible, he would be glad to examine a sample of this new article of merchandize. And if a *fresh* specimen cannot be now procured, he would be thankful for a *dried* fish to look at."

To this an answer was returned in these words:—

" J. C. is happy to have it in his power to present Dr. M. with one of the new species of fish just imported from Salem, *via* the mail. It is certainly an interesting little animal. But J. C. fears it may have been injured since its arrival in the city of Washington."

" March, 1806."

The hydrometrical curiosity was inclosed in a paper with this humorous account of it by the artist who made it.

" The arcanum mirabile, or sensitive fish, being a relick of Fairy land. Gentle reader, shouldest thou lay this representation of a fish upon thy hand, it will, to thy utter astonishment, move in such contortions as to exhibit the appearance of a fish just drawn from the water. And to create thy wonder the more, it discovers the *inmost workings of thy heart.* If it be laid upon a lady's lip, it straightway intimates whether she hath been lately kissed. If it be laid upon the hand which is cold and dry, it has but little motion, intimating that he hath but little affection, more given to selfishness than generosity, *(a rare occurrence, however, in our days).* Lastly, if it be put upon a hand *hot and moist*, for instance, the hand of a lawyer, it will be thrown into violent contortions, as if it had got from the frying-pan into the fire."

Method of Writing, practised by the Seneka Indians of New-York.

During the revolutionary war, all the six nations of Iroquois, except the Oneidas, joined the enemy. The behaviour of the Mohawks, Onondagos, Senekas, Cayugas, and Tuscaroras, was so murderous and destructive, that the famous expedition against them under General Sullivan was made. This broke their force, and they never rallied afterwards. But their savage cruelty against the peaceful farmers and their families at Wyoming, Cherry Valley, and along the Mohawk river, will be long remembered.

While these horrible barbarities were practised against the husbandmen on the frontiers, a parcel of peltry was taken from the hostile Indians by the troops which were employed against them. Of this the following account was given by Captain Gerrish, of the New-England militia, in a dispatch, dated Albany, March 7, 1782.

Extract from Captain Gerrish's Letter.

" The peltry taken in the expedition will, as you see, amount to a good deal of money. The possession of this booty at first gave us pleasure; but we were struck with horror to find among the packages, eight large ones, containing scalps of our unhappy country folks, taken in the three last years by the Seneka Indians, from the inhabitants of the frontiers of New-York, New-Jersey, Pennsylvania, and Vir-

ginia, and sent by them as a present to Colonel Haldimand, Governor of Canada, in order to be by him transmitted to England. They were accompanied by the following curious letter to that gentleman:

Major Crawford's Letter to Governor Haldimand, of Quebec.

" *Tioga, Jan.* 3, 1782.

" May it please your Excellency,

" At the request of the Seneka chiefs, I send herewith to your Excellency, under the care of James Boyd, eight packs of scalps, cured, dried, hooped, and painted, with all the Indian triumphal marks, of which the following is an invoice and explanation.

" No. 1. Containing forty-three scalps of Congress soldiers killed in different skirmishes: these are stretched on black hoops, four inches diameter; the inside of the skin painted red, with a small black spot, to note their being killed with bullets: also sixty-two farmers killed in their houses; the hoops red, the skin painted brown, and marked with a hoe; a black circle all round, to denote their being surprised in the night; and a black hatchet in the middle, to denote their being killed with that weapon.

" No. 2. Containing ninety-three of farmers, killed in their houses; hoops red, figure of a hoe, to mark their profession; great white circle and sun, to show they were surprised in the day time; a little red foot, to show they stood upon their defence, and died fighting for their lives and families.

" No. 3. Containing ninety-seven of farmers; hoops green, to show they were killed in the fields; a large white circle, with a little round mark on it for the sun, to show it was in the day time; black bullet mark on some, hatchet on others.

" No. 4. Containing one hundred and two of farmers; mixed of the several marks above; only eighteen marked with a yellow flame, to denote their being of prisoners burnt alive, after being scalped, their nails pulled out by the roots, and other torments; one of these latter, supposed to be a rebel clergyman, his hand being fixed to the hoop of his scalp. Most of the farmers appear by the hair to have been young or middle aged men; there being but sixty-seven very grey heads amongst them all; *which makes the service more essential.*

" No. 5. Containing eighty-one scalps of women; hair long, and braided in the Indian fashion, to show they were mothers; hoops blue, skin yellow, ground with little red tad-

poles, to represent by way of triumph, the tears of grief occasioned by their relations; a black scalping knife or hatchet at the bottom, to mark their being killed with those instruments. Seventeen others, hair very grey, black hoops, plain brown colour; no mark, but the short club or the cassatete, to show that they were knocked down dead, or had their brains beat out.

"No. 6. Containing one hundred and ninety-three boys scalps of various ages; small green hoops, whitish ground on the skin, with red tears in the middle, and black bullet marks, knife, hatchet, or club, as their deaths happened.

"No. 7. Two hundred and eleven girls scalps, big and little; small yellow hoops, white ground, tears, hatchet, club, scalping knife, &c.

"No. 8. This package is a mixture of all the varieties above-mentioned, to the number of one hundred and twenty-two; with a box of birch bark, containing twenty-nine little infants scalps of various sizes; small white hoops, white ground, no tears, and only a little black knife in the middle, to show they were ripped out of their mothers' bodies.

"With these packets the chiefs send to your Excellency the following speech, delivered by Conciogatchie, in council, interpreted by the elder Moore, the trader, and taken down by me in writing."

Speech of the Senekas to Gov. Haldimand.

"Father,

"We send you herewith many scalps, that you may see that we are not idle friends. *(A blue belt.)*

"Father,

"We wish you to send these scalps over the waters to the *great king*, that he may regard them *and be refreshed*, and that he may see our faithfulness in destroying his enemies, and be convinced that his presents have not been made to ungrateful people. *(A blue and white belt with red tassels.)*

"Father,

"Attend to what I am now going to say; it is a matter of much weight. The great king's enemies are many, and they grow fast in number. They were formerly like young panthers; they could neither bite nor scratch; we could play with them safely; we feared nothing they could do to us. But now their bodies are becoming big as the elk, and strong as the buffalo; they have also got great and sharp claws. They have driven us out of our country, for taking part in

your quarrel. We expect the great king will give us another country, that our children may live after us, and be his friends and children as we are. Say this for us to the great king. To enforce it we give this belt. *(A great white belt with blue tassels.)*

" Father,

" We have only to say further, that your traders exact more than ever for their goods; and our hunting is lessened by the war, so that we have fewer skins to give for them. This ruins us. Think of some remedy. We are poor, and you have plenty of every thing. We know you will send us powder and guns, and knives and hatchets; but we also want shirts and blankets." *(A little white belt.)*

" I do not doubt but your Excellency will think it proper give some further encouragement to those honest people. The high prices they complain of are the necessary effect of the war. Whatever presents may be sent for them through my hands, shall be distributed with prudence and fidelity.

" I have the honour of being,

" your Excellency's most obedient, &c.

" JAMES CRAWFORD."

Crawford's Animalcular Hypothesis of Epidemics.

The doctrine of invisible insects and worms, as the exciting causes of popular distempers, has not found many advocates during the discussions that have taken place concerning yellow fever within the last fifteen years. It had been boldly taught in 1720, by Richard Bradley, F. R. S. who derived the insects from Tartary. Bradley wrote a tract which he called " The Plague of Marseilles considered." But although the animalcular hypothesis has been neglected so long, it has at length found a serious and zealous supporter in Dr. John Crawford, of Baltimore. His sentiments have been laid before the public in a respectable literary paper, called the *Observer*, and edited in that city, it is said by a lady. Dr. C. begun his publication in April, 1807, and has continued it occasionally until August, and he gives reason to expect a further continuation. His memoir is entitled, " Remarks on Quarantines." He is convinced these are inconvenient, oppressive and injurious regulations. He denies that the yellow fever is either the offspring of contagion or of gaseous effluvia. But in a long chain of reasoning, he labours to prove that that distemper, and indeed all other epidemics,

are consequences of *animalcular action upon human bodies.* When great swarms of these invisible creatures attack mankind at once, they excite diseases, which assume specific forms, according to the number and nature of the assailants. And as dropsy may be caused by the hydatid animal, and itch by the psoric animal, so may dysentery be caused by intestinal animals, and yellow fever and other fevers by their appropriate species of animalcules. The author is a strenuous disciple of Malthus, and believes that war and epidemic diseases are among the necessary means by which the excessive multiplication of mankind is to be kept within bounds, and their numbers reduced to the limit which is consistent with the health and peace of society.

Dr. Hodges, in his Loimologia, or the history of the London plague of 1665, after considering the animalcular hypothesis, rejected it as unreasonable. He ascribed it to *Kircher* as its author. But Dr. C. is of opinion, that neither the greater cleanliness of modern living, nor the effects of a more improved agriculture upon the human race, has any thing to do either for or against epidemic diseases. These are wholly to be ascribed to the prevalence of their appropriate animals. "In the herding together of insects will be seen the locality of disease." All that can be done, therefore, by public authority, is to prevent those persons who are well from going to places where the fever producing animalcules (like musquetoes and fleas) may fasten on them, and to remove those who are already the prey of legions of these creatures, to places where none of these tormentors exist.

For ourselves, who are believers in the chemical theory, we must refer such of our readers as wish further proofs of Dr. C.'s learning and ingenuity, to his original dissertation.

Successful Experiments with a Steam-Boat.

Notwithstanding the various unsuccessful projects of propelling boats by means of steam-enginery, Mr. Fulton has had the courage to construct one at New-York, upon a plan of his own. His boat is upwards of 140 feet long, and about 15 wide, resembling a batteau of enlarged dimensions. The engine is upon the plan of Watt and Boulton's latest improvement, and is a most complete piece of machinery. The power is applied to the water in which the boat moves, by means of wheels, with only eight arms, revolving on their axis. When the piston makes 20 strokes

in a minute, these are turned with a motion brisk enough to stem the currents both of the East and North rivers, at the rate of four miles and more in an hour. She draws but a few inches of water. She actually made a voyage to Albany and back again in 100 hours, or a little more than four days. And promises to be of the greatest service in working her way, against the streams of rivers, such as the Missisippi and others that have no tides.

Oil of BENNI, *a good Article of Food.*

Among the negroes in Georgia a plant is cultivated, which appears to be a species of *sesamum*. They call it *benni*, which is probably the African name for it. The grains are of a brownish white, and about the size of flax-seed. They abound with oil.

Several barrels of *benni-seeds* were shipped by John Milledge, Esq. from Savannah, to New-York, consigned to Col. William Few. By direction of this latter gentleman they have been pressed in a lintseed mill, and have been found to yield plenty of oil; three gallons at least to a bushel.

This vegetable oil is clear, mild, well-flavoured, and excellent for sallads. Its qualities are so good and wholesome, that it may be employed in lieu of the oil of olives, both in medicine and diet. Instead of importing this article from the south of Europe, the Americans may prepare the oil of sesamum from their own fields. The grains are of a tender structure, and may be crushed under the screw without previous grinding. In addition to all which circumstances, it may be added, that the oil separates freely by cold expression; and it may hence be hoped that our tables will, in process of time, be furnished with plentiful supplies of this sweet and nutritious substance.

The *oriental* sesamum is a very valuable plant, and is cultivated in Syria, India, Persia, Bucharia, Egypt, Moldavia, and various islands of the Mediterranean sea, and at Constantinople, for the sake of the oil. It grows wild in Egypt, Ceylon, and Malabar. It is an annual. The seeds were anciently used by the Egyptians for food, as they are at present in Jamaica. They may be made into broths and cakes, and even employed as an ingredient in bread. They afford a great quantity of oil; at the rate of half a pound of the oil to two pounds of seed. It is inodorous and insipid; very pellucid; and will remain two or three years without rancidity. It is nearly a-kin to oil of olives.

The *Indian* sesamum is a different plant. It is cultivated in Arabia, and the oil is employed in cookery and for lamps. The negroes use the seeds in soups and for cakes. Nine pounds of seed afford two pounds of oil, which resembles oil of almonds, and may be kept longer. For further particulars the *Apparatus Medicaminum* of Murray may be consulted, vol. i. p. 742.

Local Origin of the Yellow Fever at Syracuse and Athens, long before the Christian Era.

Diodorus Siculus, lib. xii. cap. 2, gives an account of the expedition of the Athenians, under Eurymedon and Demosthenes, against Syracuse, the famous city of Sicily. This was about the 410th year before the Christian era. A plague broke out in their camp adjoining the city, owing to a *stinking marsh* in the neighbourhood, and so raged and increased that great part of the army perished.

Diodorus, lib. xiv. cap. 7, describes, with some detail, the distemper which invaded the Carthaginians in the year before Christ 394, when encamped on the same ground, near Syracuse, that had been formerly occupied by the Athenians. He calls it a plague; and says it was first ascribed to the vengeance of the gods, for the rifling and plundering of the temples of Ceres and Proserpine. But he considers the *place itself* as the great occasion of the disorder. The ground was marshy and spungy. Great multitudes of men were thronged together. It was summer. The nights were chilly, and the days intolerably hot. The pestilential air was blown upon them by a southerly wind. There was no idea of importation from foreign places. The symptoms were "*catarrhs* and swellings of the *throat*, which were caused by the stench of the bodies that lay unburied and the putrefaction of the soil. Then followed *fevers*, *pains in the back*, *heaviness of the loins*, *dysenteries*, *blotches* and *boils* over the whole body. Some ran [illegible] about the camp, beating every one they met." Compare these with the fevers which prevail there in modern times, and with those that exist on the other coasts and islands of the Mediterranean, and of the Atlantic regions of America.

Examine also what Plutarch has recorded in his life of Pericles. This commander was called the promoter of the Peloponnesian war; in the course of which, during its continuance of twenty-seven years, the people of Attica were severely distressed *on the land* by the powers in alliance against the

At the same time, by the strength of their fleet, they possessed a decided superiority *at sea.* In this posture of affairs, it was supposed by some that the Peloponnesians would ultimately have been overcome, had not a mortal distemper made its appearance in Athens, and, in addition to the terror it caused, destroyed a great many lives, particularly of the most courageous youth. Plutarch (in Vit. Pericl.) relates that the enemies of Pericles persuaded the citizens that the disorder proceeded from the multitude of country people who were *crowded together in the city*, and obliged, *during the heat of summer, to live a lazy and inactive life. confined in little close tents or cabbins, instead of breathing the pure and open air to which they had been accustomed.* Of this they said he was the cause, who had, in consequence of that war which he himself had occasioned, poured in such vast numbers *of people from the country, whom he kept unemployed, and penned up like cattle to infect and destroy each other, without affording them any intervals of relief and refreshment.* Such a charge as this shows plainly enough that a man's enemies sometimes speak the truth.

This plain account corresponds perfectly with modern experience. This plague of Athens happened about 427 years before the Christian era, *and was strictly local and uncontagious.* And what renders this conclusion more worthy of attention in the American States is, that the latitude of Athens is nearly the same with those of New-York, Philadelphia, and Baltimore.

Acid Fumigations exploded as Destroyers of Pestilential Exhalations.

It will readily be recollected that the English nation boasted, about nine years ago, that Dr. Smyth had discovered a specific corrector of noxious vapours. This was the *nitrous fumigation*, for which the British government gave him both an honorary and pecuniary reward. Soon after, the French nation set up a rival pretension, and proclaimed, with an almost unanimous voice, that Mr. Guyton's *oxygenated muriatic gas* was the true material for disinfecting the atmosphere. And more recently still a Spanish author has demanded a hearing, and Don Arejula contends that the *sulphureous acid vapour* is the only thing that merits any consideration.

Wary observers have ever considered these several projects as mistakes or delusions in science, and the books contain-

ing the experiments and narrations in support of them as false experience, or misinterpretation of facts. And whether the nitrous, muriatic, or sulphureous agent was employed, or the English, French, or Spanish hypothesis supported, cautious interpreters of nature were early and uniform in believing they were all worse than useless, and totally unfit for their pretended purposes. While the several principals and their adherents simply rejected *each other's* plans and doctrines, it was equally apparent to an American that *neither of them* was worthy of the smallest credit. The scientific men of the United States boldly prophesied their reign would be short, and that after the fever of novelty had subsided, the calm good sense of mankind would reject the whole, and wonder how they could ever have been brought into fashion. There can scarcely be found an example of science more unhappily perverted and abused.

What was thus foretold has actually come to pass. The respective discoverers have, from the beginning, condemned one another; and now the public is passing sentence of condemnation upon them all. The entire business of acid fumigation, which has been the theme of almost unparalleled boasting or puffing, and about the honour of which individual has been vying with individual, and nation contending with nation, has been for two or three years on the decline, and will soon fall into total and deserved neglect. The mass of spurious testimony brought forward on this occasion will teach a lesson of caution to all experimental investigators.

Where uncleanness and putrefaction exist, *pure air* and *pure water*, aided by *alkaline earths and salts*, are the genuine detergents and antiseptics.

On ventilation, washing and alkalization, solid reliance may be placed, for they never deceive. The observance of the proper use of these constitutes the ALKALINE or AMERICAN practice of overcoming pestilential influence. But for the detailed account of it, we refer to Hex. i. vol. v. p. 191, and to the article "Cleanliness" in the New-York edition of Quincy's Lexicon.

Woodhouse's new Method of preparing Fulminating Quicksilver.

Professor Woodhouse has communicated to Professor Mitchill the following improved process:

"I have discovered a new method of preparing fulminating mercury, superior to that published by either Howard

or Brugnatelli. The former of these gentlemen, you know, employs heat, crude mercury, spirit of wine, and nitric acid. The latter turbith mineral, spirit of wine, and the same acid.

"Having made a number of experiments according to the mode of Brugnatelli, and employed all the ingredients in the same proportions, at the same time, and as precisely as possible under the same circumstances, I succeeded but once in three times, and the fulminating compound was often of a grey colour. That of a white colour is supposed to be the best.

"Howard's process is troublesome, and yields but an inconsiderable product. He informs us that he has obtained one hundred and thirty grains from one hundred of crude mercury; but I seldom procure more than seventy-two grains. Employing Brugnatelli's method, half an ounce of turbith mineral yielded me one hundred and eighty grains.

"My mode is as follows:

"Take two ounce measures of a saturated solution of the nitrate of mercury in water, and pour it into a quart tumbler. Add to it four ounce measures of alkohol, and then two ounce measures of the best and strongest nitric acid.

"Immediately an effervescence will take place, and an immense quantity of nitrous etherized gas, and nitrous air, will be discharged in thick clouds, and in about fifteen minutes the fulminating mercury will be deposited at the bottom of the vessel, in beautiful slender crystals of a white and brilliant colour. They must be washed by filling the tumbler twice with pure water, and then dried by a gentle heat, or by exposing them two days to the air. The proportion of ingredients here mentioned will yield two hundred and twenty-seven grains of this exploding preparation. The process never fails, is cheaper, more easily and speedily performed, and yields a larger product than any other yet known."

Further Topographical Information concerning the City of New-York.

An alphabetical table of the situation and extent of the different streets, roads, lanes, wharves, piers, slips and basons, as well as of the public buildings, has been lately published in a convenient pamphlet form, by Mr. JOHN LOW. This has been examined by the street commissioner, and is the best description extant of those parts of the city, in its present enlarged and growing condition.—Mr. WILLIAM

BRIDGES, city surveyor, has also compiled, from the best authorities, a plan of New-York, including the recent and intended improvements. In this are contained all the streets, as they are laid out, quite to Spruce-street, a little beyond Bellevue, on the East-river, and thence across to Bank-street, somewhat to the northward of the State-Prison, on the Hudson. This is by far the most comprehensive map of the city that has been published. These two publications will be highly serviceable to the inhabitants, and more especially to strangers, by giving them, in an easy manner, correct ideas of New-York. They will form excellent materials for the second edition of the " Traveller's Guide."

[*Mr. Post requests that Dr. Miller would do him the favour to cause the enclosed notice to be inserted in the Medical Repository, which Mr. P. understands is now in the press, and will be published in a few days.*]

Lectures in Columbia College.

" The medical lectures in Columbia College will commence the second Monday in November next, where the following branches will be taught, viz.

" Anatomy, Physiology, and Surgery, by Dr. WRIGHT POST and Dr. ALEXANDER RAMSAY.

" The Practice of Physic and the Institutes of Medicine, by Dr. WILLIAM HAMERSLEY.

" Chemistry and Legal Medicine, by Dr. JAMES STRINGHAM.

" Midwifery and Clinical Medicine in the New-York Hospital, by Dr. JOHN R. B. RODGERS.

" Materia Medica and Botany, by Dr. DAVID HOSACK.

" In announcing, on this occasion, the name of Dr. Ramsay as coadjutor of Dr. Post in the department of Anatomy for the ensuing season, we are authorized in saying that his talents as lecturer on Anatomy and Physiology in Edinburgh were well known and highly respected. And we take occasion further to observe, that in order to increase the advantages which may be obtained from the course of Anatomical Lectures in Columbia College, that Dr. Ramsay has an apartment allotted to him in the College, where private dissections and demonstrations will be conducted on an extensive plan, for the benefit of those who may be disposed to become more intimately acquainted with the subject."

Officers of the Medical Society of the city and county of New-York, chosen at their anniversary meeting on the first Monday in July, 1807.

SAMUEL L. MITCHILL, *President.*
JOHN R. B. RODGERS, *Vice-President.*
EDWARD MILLER,
WRIGHT POST,
WILLIAM HAMERSLEY,
JAMES S. STRINGHAM, and
DAVID HOSACK, } *Censors.*
JOHN ONDERDONK, *Treasurer.*
WALTER W. BUCHANAN, *Secretary.*

Central Medical Society of New-York.

The delegates elected from the Medical Societies in the different counties, convened in the city of Albany, on the first Tuesday of February, 1807, for the purpose of organizing a society, to be entitled, "*The Medical Society of the State of New-York*," pursuant to the act, entitled, "An act to incorporate Medical Societies, for the purpose of regulating the practice of physic and surgery in this state," passed the 4th of April, 1806.

A quorum being present, they proceeded to the choice of officers; and on canvassing the ballots, it appeared that the following persons were elected to the offices annexed to their respective names:

WILLIAM M'CLELLAND, *President.*
ALEXANDER SHELDON, *Vice-President.*
JOHN STEARNS, *Secretary.*
MOSES WILLARD, *Treasurer.*
LYMAN COOK,
CALEB SAMPSON,
JOHN M. MANN,
WILLIAM WHEELER,
MOSES WILLARD, } *Censors.*
DAVID R. ARNELL,
JOHN ELY,
WESTEL WILLOUGHBY,
ALEXANDER SHELDON,
JOHN M. MANN, } *Committee of Correspondence.*

Resolved, That the President be authorized to appoint all committees of this society.

Alexander Sheldon, Caleb Sampson, Philip Smith, William Wheeler, and Lyman Cook, were appointed a com-

mittee to report such amendments to the act incorporating Medical Societies as they may judge necessary.

Jesse Shepherd, John Stearns, John M. Mann, Reuben Hart, and Gurdon Huntington, were appointed a committee to frame a code of bye-laws, and to report the same as soon as possible.

Alexander Sheldon, James G. Graham, and Gurdon Huntington, were appointed a committee to agree on the device and inscription of a seal for this society, and to procure the same without delay; also to frame a petition and bill comprising the reported amendment to the law, and present the same to the legislature for their sanction.

Resolved, That the diploma of this society be written on parchment.

Resolved, That the President and Secretary be a committee to superintend the printing of the bye-laws, and to transmit a copy of the same to each member of this society.

The society then adjourned to the first Tuesday in February next. By order of the society.

JOHN STEARNS, Sec'ry.

Progress of Medicine in the United States.

It affords us great pleasure to observe so many proofs of the uninterrupted progress of medical improvement, and of the assiduity with which every enterprize in this department of science is prosecuted in various parts of the United States. The valuable periodical publications of Dr. Coxe and Dr. Barton, at Philadelphia, bear witness of this fact. The former, we are pleased to find, has completed the third volume of his *Medical Museum*, and is now proceeding with the fourth. The latter has published two volumes and two supplementary parts of his *Medical and Physical Journal*, and is now engaged in further prosecuting the work. It may be safely pronounced that the United States are exceeded by no country in the world of equal population and wealth, in the zeal and activity with which such undertakings are conducted, or in the liberality with which they are patronized and supported. Among proofs of the fact we assert, it is proper likewise to mention the commendable zeal and munificence which have been displayed at Charleston (S. C.) and at Boston, in the establishment of Botanic Gardens on a liberal plan. The exertions of the Professor of Botany in this city deserve also to be mentioned with the highest respect, while we are engaged in the notice of this subject. In

the garden of the latter are now growing the *Mango*, *Cinnamon*, *Tea*, *Coffee*, *Ginger*, *Yam*, *Cochineal-cactus*, *Aloes*, *Rhubarb*, *Sago*, *Olive*, *Shaddock*, *Squill*, *Arrow-root*, and *Gum Arabic plants*. The collection is fast increasing, and is enriched by three hundred species received from the *Jardin des Plantes* in Paris. The *Cactus grandiflorus*, the *Magnolia grandiflora*, the *Pinus Pinea*, or *pudding pine*, the *Sparmannia Africana*, and the *Protea argentea*, and *Sericea*, are also among the rare and curious vegetables of this collection. The new hot-houses lately erected will enable the proprietor to carry through the winter a much larger number than heretofore, and to nurse in a proper manner the various species generously sent him from almost all quarters. We hope these communications will be continued, as tributes to the merit of an individual who has established this garden at his own expense, without either a gift of land or an endowment of salary from the public.

Mineralogical Discoveries.

The Baron Carendeffez announces that a sulphuret of Molybdena is found in Chester county, Pennsylvania, which had been mistaken for a carburet of iron. This discovery will be important in the arts of painting and dyeing; of which the Baron is entirely satisfied by the analysis and chemical combinations, to which, in the course of his experiments, he subjected this mineral.

The Baron has also, within a short time, examined with much attention, two specimens of sulphuret of lead, found on the North-River side of the New-York island; one of these specimens yielded 45, and the other 60 per cent. of lead. No silver was discovered in either of these specimens, after a very accurate examination.

APPENDIX.

[*It is proper to state that the following paper is inserted, not for the purpose of reviving or exasperating the controversy, but at the earnest and repeated request of the writer, who conceives himself entitled to be heard through the same channel in which the original publication appeared.*]

IN the 13th volume of the Medical and Physical Journal, page 401, is inserted a paper, entitled, "Observations on Chorea Sancti Viti, with a new Theory of the Disease; by John Redman Coxe, M. D. of Philadelphia." The *new theory*, propounded in that paper, is, that chorea is *merely* a symptomatic affection of a disease, namely, hydrocephalus internus, which, though long known, has not, in Dr. Coxe's opinion, been thoroughly understood till of late years. Whether Dr. Coxe's theory be new or old, whether it be true or false, I should not have taken the time thus professedly to examine, had he not referred to a publication of mine on the internal dropsy of the brain, and censured not only some of my reasoning, but also part of my practice, in a manner at once abrupt, rough, and magisterial. "It appears to me," says Dr. Coxe, "that Dr. Patterson has greatly erred in supposing chorea the primary disease; of which each must judge for himself." And adverting to the treatment of the interesting case, that of a young lady, for which he is indebted to my treatise, he further remarks, "The operation of the emetics probably hastened her dissolution, by determining too forcibly the circulation of the brain (as Dr. Coxe expresses it), and hence exciting an acute state of hydrocephalus."

Before Dr. Coxe pronounced, that I "greatly erred in supposing chorea the primary disease," surely it behoved him to refute the reasoning whereon my conclusion is founded; yet he has not made the smallest attempt at an undertaking, the performance of which is so necessary to vindicate his dogmatism. I shall, therefore, in justice to myself, and for the sake of truth and science, here transcribe my reasoning, and call upon Dr. Coxe for refutal, or for concession.

"With respect to the manner in which convulsive affec-

tions occasion a watery effusion in the brain, it may be observed, that persons liable to those affections exhibit a considerable degree of excitability, and that the principle of irritability is quickly accumulated and quickly diminished in their constitutions. Hence are derived the periodical or repeated paroxysms of those disorders, which, the innate nervous stimulus on the one hand, and the prompt renovation of the irritable principle on the other, will naturally constitute.

"This habit is remarkably prevalent in childhood and youth; periods which compose the spring-time of life. And as in the vernal season, the vegetation of plants, which also depends on the mutual effects of stimulus and irritability, is in the greatest vigour; so in young persons, the same principles have their highest power, and are the agents of growth which conduct the species to its state of maturity. The principle of irritability is not confined to the fibre, or simple solid; but is also possessed by the fluids of the body, particularly by the blood. The heart, which contains so much of the fibre, and is the fountain of the fluid, must be the centre of the principle, and the influence of this organ on the contents of the cranium is well known.

"As in those ages, in which this constitution prevails, convulsions likewise prevail, the increased action which they produce will augment the impetus of the circulation, especially in the vessels of the head; which we see is actually the case, since a considerable determination to that part is observed in those disorders. This determination increases the action of the blood-vessels, and inflammation is the consequence. This consequence is forwarded by the plethora, particularly of the head, which exists in the early and advancing stages of life; and the whole train of symptoms, constituting *febricula hydrocephalica* (the name which I appropriate to the disease), is then brought into view.

"But how are we to explain the occurrence of effusion, where the accumulation of the irritable principle is not so vigorous, and yet the action of stimuli is assiduous? In these cases I would conjecture, that the nervous stimulus, acting, as I suppose, on a mass of irritability, less moveable than in convulsive habits, excites a passion, which, if violent, suddenly destroys irritability or the vital principle, and death ensues; or which, if moderate, engages only a part of the irritability, and the natural state of temper is regained for a time. To illustrate this reasoning by an example: In

an account of the death of the celebrated Mirabeau, we are told, 'Un tempèrament ardent et trop exercè a abregé les jours de cet homme célébre dont les talens faisoient l'esperance des amis et de la constitution.' Upon the report of poison having been administered, the body being opened, 'On a trouvé un épanchement dans un des lobes du poumon, et un amas de pus dans le pericarde de cœur; il y avoit aussi un petit épanchement dans *le cerveau*, tous les autres viscères étoient en bon état.' Does not this instance show, that an irritable temper, almost constantly exercised, may be a cause of effusion in different cavites, and of a watery effusion in the brain; which conditions, in all probability, were preceded by more or less inflammation in the diaphanous membranes of those parts? And must we not admit an irritability of temper in those persons peculiarly subject to hydrocephalus internus?

"But, however seasonable we may suppose the theory, we should not suffer it to engross our thoughts so much as to divert us from attending to any opportunity that may appear likely to advance the practice; especially in a disease delusive in its nature, alarming in its course, and too, too often fatal in its termination,"*

With regard to the emetics, whose operation, Dr. Coxe says, probably hastened the death of the patient, a sense of candour, had it been felt, would have induced him to absolve the medical attendant from any blame on that score; for he might have observed, that those remedies were had recourse to by domestic advice, in the absence of the physician, who was at two great a distance to prescribe with that expedition which the existing circumstances were supposed to require. But even had the physician ordered, or sanctioned, those emetics, conceiving the case to be hydrocephalic, he would have had the authority of eminent professional men to support the practice. If the stomach appeared loaded, the experienced Dr. Fothergill gave a quarter or half a grain of tartar emetic, and afterwards appeased the vomiting the saline, absorbent medicines, occasionally adding a few drops of thebaic tincture. Dr. Warren, of Taunton, thinks that the *frequent use* of gentle emetics would probably afford relief; as emetics, he remarks, are known to be highly salutary in promoting absorption from

* Letters concerning the internal dropsy of the brain, p. 32—3. Edit. 1794.

cavities. In his opinion they would certainly be safer than mercury, their operative action being soon over. Dr. Quin, of Dublin, says, "the *first step* to be taken is to empty the stomach," for which he assigns his reasons, but advises the mildest emetics, such as infusion of camomile, and cautions against the employment of antimonials. Dr. Aery, of Whitehaven, and Dr. Campbell, of Hereford, began the treatment with emetics; and Mr. Jameson, of London, gave an emetic in the case of a girl nine years old, the second day after serious symptoms of hydrocephalus internus appeared. To these may be added, Mr. Shaw, of Dudley, in Worcester, Mr. Davis, of the Tower, &c. &c.*

In this case of my patient, therefore, had it been a case of hydrocephalus internus, and had I prescribed emetics, either in the early or advanced stage of the disease, I should have had sufficient precedents for the measure. But, in the irritable and reduced state of her stomach, I considered those Herculean emptiers, emetics, unwarrantable expedients; and had I viewed the disease in the light of idiopathic hydrocephalus internus, Dr. Coxe might have perceived (page 35 of my tract) that my sentiments are against emetics in diseases of a febrile cast, having a peculiar determination of blood to the head, such as genuine internal dropsy of the brain. No person, however, without distorting facts and perverting reason, could construe the case of my patient into a case of acute hydrocephalus: for, until the last short period of the illness, when the metamorphosis was brought round, the phenomena were of a very different character from those belonging to the hydrocephalus internus; and the watery effusion, which finally occurred in the ventricles of the brain, was similar to that which happens at the close of other distempers; for instance, in typhoid fever, in mania, and, what is more to our point, in epilepsy, a species of termination which shall be particularly noticed in the sequel.

The influence of convulsive affections in causing accumulations of the fluids in the brain is not a new point in pathology; it has occupied the attention of physicians during some years past. A child was indisposed about two months with frequent head-ach, which was supposed to proceed

* London Med. Observ. and Inquir. vol. iv. art. iii. Simmons's Med. Journal, vol. ix. Quin's Treatise on the Dropsy of the Brain, p. 63, 64. Edinburgh Med. Comment. vol. viii. p. 333. Id. vol. ix. p. 240. London Med. and Physic. Journal, vol. iii. p. 517. Id. vol. viii. p. 98.

from worms, but anthelmintic medicines afforded no relief, and he died in a convulsive fit. On opening the head, the vessels of the brain were observed to be uncommonly turgid, and in the ventricles was found more than double the ordinary quantity of serum. "In this case," says the late Dr. Percival, of Manchester, "I apprehend the turgescence of the vessels was the *effect*, and *not the cause* of the convulsions; for the reflux of the blood from the head to the heart being obstructed during the fit, in which I believe the patient expired, the vascular distention must have been permanent. The redness and even the blackness of the face, which takes place in convulsions, affords sufficient proof of sanguinous accumulations."* Hence it appears, that the same speculative opinion, which Dr. Coxe styles a *new theory*, with respect to convulsive motions in hydrocephalus, was conceived at least thirteen years before Dr. Coxe wrote, and had obtained so much credit as to induce the learned Dr. Percival to counteract its extension.

If, as Dr. Coxe supposes, chorea be not an idiopathic disease, but arises *solely* as a symptom of the *chronic* hydrocephalus, the characteristic phenomena of the latter should always precede or accompany the appearance of the former. Whereas, upon a careful examination, we shall find that the symptoms of chorea exist without any token of hydrocephalus, as strikingly exemplified in the case of my patient already alluded to, in whom its essential features prevailed long before it wrought the change which terminated in the fatal effusion into the ventricles of the brain. Had the cases of chorea which came under the cognizance of Sydenham been accompanied with hydrocephalic symptoms, so careful an observer certainly would have mentioned such striking occurrences, and would not have found, as he did, those cases liable to periodical returns, which rarely or never happen in any species of hydrocephalus.† Dr. Coxe, indeed, seems to be aware of the difficulty that would arise to him in this point, and puts the question, "If hydroce-

* Medical Tracts, vol. i. page 125, published in 1791.

† Dr. Coxe is chargeable with an oversight in respect to Sydenham's theory of chorea, when he says that Sydenham "scarcely adverts to any thing but its curious gesticulations." Whereas that celebrated physician ascribes the production of chorea to a humour thrown on the nerves, which, by its irritation, occasions such preternatural motions, and, accordingly, his curative expedients are devised from these two indications: 1. To lessen the humours by bleeding and purging; and, 2. To strengthen the nervous system. See *Schedula Monitoria* and *Processus Integra*.

phalus is the cause of chorea, it may be asked, as the former is not an unfrequent disease, why the latter does not more often occur?" He confesses that he is unable to resolve the question, because he includes himself among those who know too little of the nervous system to reason accurately upon it; but tries the point with another query, "Why the apoplexy, epilepsy, palsy, &c. are not always produced?" To this I answer, surely they always would be produced if they were symptoms of hydrocephalus; and so would chorea if it possessed the affinity of a symptom.

In the second case of chorea stated in my tract, p. 77, not a symptom of hydrocephalus can be traced; of the same description is Dr. Coxe's second case; and many more cases are on record, wherein the former disease has been totally independent of the latter. Instead of being solely a symptom of chronic hydrocephalus, chorea sometimes proceeds from obstructed menses, sometimes from exposure to rigorous weather, but generally from irritation in the first passages. So strong a tendency have particular irritations of the stomach to excite convulsive agitations, that eating certain sweet things has been observed to cause them; swallowing poisonous substances has produced the same effect; and a spasmodic affection of the organs of deglutition has been attended with choreatic gesticulations.*

Mr. Alexander, of Montrose, relates three interesting cases of chorea, which were successfully treated by means of zinc, castor, blistering, cold bath, and sedative injections. From the first of those cases it appears, that chorea will sometimes excite paroxysms of muscular exertion as inordinate as are excited by phrenitis, mania, or intoxication, and will thus exhaust the sensorial power so as to produce syncope, followed by strabismus, a symptom of cerebral affection; yet hydrocephalus shall not be the consequence. The strabismus can be with reason ascribed only to the efforts of the brain to recruit its impaired energy; but cannot, on good grounds, be imputed to hydrocephalic oppression. Every circumstance of the case points to diminished tone of the alimentary canal, in a system prone to the operation of morbid irritability, as the occasional cause of the convulsive motions; and consequently it is an impressive ex-

* Edinburgh Medical Commentaries, vol. xii. p. 325. Duncan's Annals of Medicine, 1798, p. 369; Id. 1799, p. 374. London Medical Observations and Inquiries, vol. vi. art. 12.

ample of the tendency which chorea has to produce such changes in the functions of the encephalon, as may ultimately terminate in an aqueous effusion into its cavities. But surely no theory, even the *newest*, can make us believe, whilst we are in our senses, that every repetition of the strabismus was occasioned by the effusion of a fluid into some cavity of the brain, and that each cessation of the ocular distortion was the effect of the absorption of that fluid.

The second case furnishes an auxiliary to the same side of the question, especially in relation to the cause which generally produces chorea, namely, a morbid condition of the alimentary canal, in a constitution of considerable mobility. The third case supports the second. And they all conspire to show, that the treatment most likely to succeed, in the cure of chorea, is that which is founded on the tonic and antispasmodic system of prescription. They all likewise tend to evince, that chorea is not a symptomatic ailment, at least not naturally symptomatic of hydrocephalus. On the contrary, it may be termed an idiopathic disease as well as hysteria, whose seat is in the alimentary canal, and which exhibits phenomena more or less convulsive, in proportion to the constitutional excitability of the subject.*

A curious example of convulsive affection, resembling paroxysms of hysteria and chorea combined, is detailed in the New-York Repository, Hex. ii. vol. i. p. 1—11, and is there ascribed to the bite of a spider, which, like the bite imputed to the tarantula, produced convulsive motions, that were counteracted most effectually by music. This case (the subject a girl fifteen years of age) strengthens the affinity above suggested, between hysteria and chorea, in regard to the seat of those causes whence they generally originate. Dr. Whytt shows that a delicate state of the first passages, or a depraved sensibility of their nerves, not only disposes people to many complaints in those parts, but that the whole nervous system is thereby rendered more moveable, and liable to be affected by the slightest exciting causes. Hence tremors, palpitations, convulsive motions, &c. may often be owing more to the infirm state of the first passages, than to any fault in the brain, or in the heart.† And that state of these passages will not be less in the present luxu-

* Duncan's Annals of Medicine, 1801, p. 308.

† Whytt's Works, p. 537, 558.

rious and dissipated age, than it was about the middle of the last century.

Dr. Macbride, under the denomination of *Hieranosos*, or *Morbus Sacer*, gives the case of a lad, about seventeen years of age, who at that time had been afflicted with the disorder above twelve years. His body was so distorted, and his legs and arms so twisted round the body, that no words can give an adequate idea of the oddity of his figure: the agitation of the muscles was perpetual; but in general he complained not either of pain or of sickness; and he retained his senses perfectly, insomuch, that he used to assist his mother, who kept a little school, in teaching children to read.* This appears to be a case of strongly marked idiopathic chorea, without the least morbid affection of the brain.

All the cases of chorea, wherein zinc was tried, in the Bristol Infirmary, from 1784 to 1788 inclusive, were nine, five boys and four girls, seven of whom were cured; at the same time, three cases are subjoined, to show that zinc is not an infallible remedy in this disease. The first case is that of a boy, seventeen years old, who, several years before, had received an injury on the head which required the use of the trepan; but who, until three months anterior to the statement of the case, had been very well, and was then attacked with chorea. Zinc, with a decoction of cinchona, during some time, promised a complete recovery; but, after continuing them a month, the disease gradually returned without any known cause, and rose to an extraordinary height. At length, by the administration of opium and camphor, together with a strong preparation of cinchona, the patient was cured. Though, in this case, the convulsive agitations seem to have some distant relation to an externally injured brain; yet it is manifest, from the absence of hydrocephalic symptoms, and from the nature of the remedies, that the state of the brain was totally different from that which exists in hydrocephalus internus, and that those agitations sprung from a morbid action of the nervous influence at large, rather than from a topical congestion in the head. For, if there had been such congestion, strong indications of it would have appeared in so violent a case, and the powerful stimulants, employed in the treatment, would not have had the curative effects.

* Methodical Introduction, p. 558—9

The other two cases are those of girls, both seven years old. The one was perfectly cured of chorea by zinc, in the space of a few weeks; but, not long afterward, she fell into a hydrocephalus, which proved mortal. This case furnishes a very apposite instance to show the power which choreatic convulsions have to induce hydrocephalic affection. There is every reason to believe that the original complaint was idiopathic chorea, which was suspended by a tonic mineral remedy; but, having sown the seeds of hydrocephalic action, which, in such subjects, it is very capable of doing, they soon ripened into a destructive maturity. The other girl, growing worse under the use of zinc, was put under a course of cold bathing and cinchona, by which, at the time the paper was written, she was nearly restored to perfect health.*

Five instructive cases of chorea, accompanied with judicious remarks, are collected by Mr. M'Mullin, and published in No. I. of the Edinburgh Medical and Surgical Journal. In those cases it is evident that the involuntary motions, debility, and other symptoms of the disease, were produced by local irritation in the bowels, which was afterwards communicated to the rest of the system through the medium of the nerves. The disease seldom occurs, except in subjects under the age of puberty, and who are of a delicate constitution. In such habits, irritation may be produced, as Dr. Whytt observed, by very slight causes, such as a depraved state of the intestinal secretions, an accumulation of fæces, worms, dentition, &c. From the appearance of the stools, which were black and fœtid, in Mr. M'Mullin's cases, he thinks it highly probable that the liver was engaged; an idea which derives support from the effects occasioned by the remedies administered. He also thinks that there was an accumulation of fæces, caused by the use of food too coarse for their weak digestive organs to assimilate, united with a want of that exercise which is necessary for pro-

* Memoirs of the London Medical Society, vol. iii. p. 563. Analogous to the first of the above three cases of chorea, a very curious instance is related by Dr. Hall, of East Retford. A woman received a severe blow on the head, which was succeeded by chorea, and yet no symptoms of hydrocephalus appeared throughout a tedious and tormenting spell of the malady. Besides, during the whole course of the disease, stimulants were the principal remedies, and argentum nitratum was reckoned the curative one. Although in these two instances chorea succeeded an external injury inflicted on the head, it will appear in the sequel, that, in a great majority of such injuries, convulsive affections do not arise.

moting healthy concoctions. Symptoms of the third cause of the disease, specified by Mr. M'Mullin, namely, irritation from worms in the intestinal canal, did not appear in any of the five cases which he transcribes.

Respecting the fourth cause of chorea cited by Mr. M'Mullin, viz. irritation from teething, he says, that it was first observed by Dr. Monro. "A young lady was affected with chorea of one side. On examining her mouth, it appeared that she was cutting one of the molares of the same side. Dr. Monro directed a crucial incision to be made through the gum, and the disease ceased in a few days. Some months afterwards she was again seized with chorea, but the other side was affected; and, on examination, it was again found that she was cutting one of the molares of the affected side. A deep crucial incision again removed the disease.* This observation is confirmed by Dr. Gregory. He was called to a boy very ill of chorea, and, on examining his mouth, he found that the second set of teeth was pushing up by the side of the first, which had not fallen out at the usual time. By removing a considerable number of the first set, the disease was removed in a very short time, although formerly the spasms had been so violent as to throw him down in the street. Next year he had another attack, which was removed by taking out the rest of the first set of teeth. He was again attacked, however, at the age of fifteen; and as no cause of irritation could be discovered in the mouth, he was treated with extract of cinchona and sulphat of iron, and was cured.

"Another boy, who was twice attacked with chorea, was cured both times by scarifying his gums. Although Dr. Gregory does not attempt to explain why the second set of teeth should thus produce chorea, while the first produces epilepsy, he considers the fact as established, and as forming a very valuable addition to the history, pathology, and treatment of the disease. These important facts directly support the opinion which I have advanced," says Mr. M'Mullin, "that the symptoms of chorea depend on local irritation, and not on debility; and that they are to be removed by removing the causes of irritation, by scarifying the gums, by expelling the worms, or by the use of brisk purgatives."†

* Dr. Monro, sen. Lectures on Anatomy and Surgery.

† Edinburgh Medical and Surgical Journal, No. i. p. 32.

The powerful influence of a cause, even indirectly irritating the *primæ viæ*, and thus producing convulsive affections, is strongly exemplified by the history of the poor children (related by Sir George Baker), who, by breathing vitiated air, were thrown into excessive tormina of the alimentary canal, which were attended with convulsions and delirium. To the same cause, rather than to improper food, may be ascribed the prevalence of chorea in the Orphan Hospital at Milan, as mentioned by Mr. M'Mullin. The principal cause of the *trismus nascentium*, has also been traced to the operation of vitiated air upon the lungs.*

Three extraordinary cases of chronic convulsions, which happened in one family, in the county of Rutland, are related in the Edinburgh Medical Commentaries, vol. ix. p. 317. These cases seem to have been a compound of epilepsy and chorea, as the paroxysms came on periodically and suddenly, beginning with hideous shrieks, succeeded by jumping, writhing, &c. but not the smallest symptom of hydrocephalic affection appeared. They first occurred after hooping-cough; and, as the accession of the fits was attended with screaming, it is probable that the painful sensations, whereby they were excited, originated in the lungs, which were affected principally in their father's house, where might have existed some latent effluvia productive of the pulmonic pain.

An herpetic eruption has been known to be attended with racking pain in the stomach, and with general convulsions. In rheumatic fever, epileptic fits have occurred from the stimulus of bile, accumulated in the first passages, and the removal of the bile put a stop to the convulsions.† When the stomach, the centre of sympathy and association, is morbidly affected, no wonder that the nervous system should be engaged, and the moving powers brought into irregular action.

In genuine hydrocephalus internus, convulsive affections do not occur until the disease be far advanced, and the choreatic species of those affections is the rarest at any stage of it. Notwithstanding what Mr. Petit says, I cannot accede to his opinion; for Dr. Whytt, whose authority is of the greatest weight in this question, never saw any convulsions

* London Medical Transactions, vol. iii. p. 113. Transact. R. I. A. vol. iii. p. 89, 108.

† Ferriar's Medical Histor. and Reflect. vol. i. p. 18.—Id. vol. ii. p. 7, 8.

happen till towards the end of the malady. This observation is confirmed by the testimony of numerous practitioners; and, in several cases, not any convulsions have occurred from beginning to end. From a review of thirty-two cases of genuine hydrocephalus internus, I find, that, in fifteen of them, no convulsions took place; and that in any of the other seventeen cases, spasms or convulsive motions did not occur until the hydrocephalus had subsisted several days, nay, in some, not until it had continued several weeks. To these thirty-two cases I can add ten or twelve, running similar courses, which have come within the sphere of my own practice. Besides, from a review of a few cases of spurious hydrocephalus, wherein the head was considerably enlarged, it appears that, in some of these, the convulsions did not attack at the beginning, and that, in others, even in those ascribed to external injuries, no convulsions happened.*

In a great majority of cases, where wounds have been inflicted on the head by external violence, convulsive affections have not appeared. In forty-three cases, published by Mr. Pott, ten only had convulsions, or spasms; but, in general, not until many days after the accidents. In sixty-two cases, recorded by Mr. O'Halloran, seven only had convulsions, and but two of these had the fits immediately after receiving the injuries. Adding these two sums together, the total number will be 105, of which not a sixth part was invaded by convulsions, or spasms. Hence we may fairly conclude, that, where a predisposition in the nervous system is absent, very morbid states of the brain shall exist without producing convulsive motions.†

* Whytt's Works, p. 727.—Edinb. Medic. Comment. vol. viii. p. 332.—Id. vol. ix. p. 240.—Id. vol. x. p. 299, 312, 356.—Medical Tracts, vol. i. p. 125, 131.—Edinb. Medic. Comment. vol. xi. p. 298.—Medic. and Physic. Journal, vol. ii. p. 131.—Id. vol. iii. p. 61, 517.—Id. vol. iv. p. 219.—Id. vol. v. p. 341.—Id. vol. viii. p. 98.—Id. vol. x. p. 71, 150.—Id. vol. xii. p. 5.—Simmon's Medical Journal, vol. vii. p. 113.—Medic. Observ. and Inquiries, vol. vi. Art. vi. vii. viii.—London Medical Transactions, vol. ii. p. 358.—Memoirs Medical Society, London, vol. i. p. 165, 169.—Id. vol. ii. p. 44.—O'Halloran's Treatise on Disorders from external Injuries of the Head, p. 75.—It is particularly worthy of remark, that this ingenious and able practitioner has anticipated Dr. Gall in the *basis* of his new doctrine of the brain, and the faculties of man. Compare O'Halloran's Treatise, chap. vii. with Dr. Arneman's "Concise Account," Med. and Physic. Journal, vol. xiv. p. 327, 329.

† Pott's Chirurgical Works, vol. i. O'Halloran's Treatise, ch. iv. to xx. p. 36 to 334.

What Dr. Coxe styles a *new theory* is nothing more than that pathological doctrine, known since the days of Hippocrates, and termed *Conversion of Diseases.* The conversions of the different genera of fever into each other are common; hæmoptoe is often converted into hysteria, and hysteria into epilepsy, mania, &c. phthisis pulmonalis is sometimes converted into arthritis, and arthritis into hepatic obstruction, dropsy, lethargy, &c. Hydrocephalus internus has been transmuted into palsy, and palsy into hydrocephalus. Of the latter conversion, Dr. Ferriar furnishes an apposite instance, in which the palsy was evidently connected with the increase of scrophulous swellings on the upper parts of the affected limb. "*Eight months* after the appearance of the paralytic symptoms, the patient complained of severe head-ach, vision became indistinct, and at length was entirely lost. Epileptic fits *then* came on, and he died comatose. When the head was opened, the ventricles of the brain were found full of water, and several tumours, which, in the prevailing medical language, might be called scrophulous, were observed in different parts of the brain."*

The late Dr. Percival saw a pulmonary consumption converted into a hydrocephalus, by the violent *succussiens* of coughing. The patient, a female, nine years old, laboured under the symptoms of phthisis pulmonalis during four months, at the end of which she became affected with unusual pains in the head, that increased rapidly to such a degree, as to excite frequent screamings. "The cough, that had before been extremely violent, and attended with stitches in the breast, now abated; and in a few days ceased almost entirely. The pupils of the eyes became dilated; a strabismus ensued; and, in about a week, death put a period to her agonies."†

The case of my patient, mutilated and misconstrued by Dr. Coxe, is a clear case of the conversion of chorea into hydrocephalus, the explanation of which I have already given. It comes under the second subdivision, third head of conversions, thus laid down by Dr. Ferriar: "If the original be a chronic disorder, such a state of the habit (favourable to the production of another disease) may take place during its continuance, and the accessory disease may be simply superadded, or it may vary the form, or affect

* Ferriar's Medical Histories and Reflections, vol. ii. p. 10, 11.
† Medical Facts, vol. i. p. 131.

the duration of the former."* Dr. Coxe's first case, which inspired him with the rudiments of the *new theory*, was a case of a similar conversion. The disease subsisted near three months before the Doctor saw the patient, at which time he had little suspicion of water in the brain, as the patient complained of very slight pain in the head at any period after he saw him; neither was the patient affected with strabismus, dilated pupil, nor with any of those changes in the pulse peculiar to hydrocephalus. And, as the Doctor owns that he "was in a great measure in the *dark*, as to the cause of his illness," I hope he will take in good part my furnishing him with some *light* on the subject. Very much in the dark, indeed, must he have been, and labouring under great perplexity, when we find him expressing his ideas in the following confused and contradictory terms: "The *water* must have been accumulated a *considerable time*, as evinced by the quantity, and the very enlarged state of the foramen ovale. Its *sudden effusion* must have produced apoplexy; but the *slow progress* of the effusion permitted the brain to accommodate itself to the pressure." —"The *water in the brain* was not, I believe, the immediate cause of death. Some *sudden effusion* or congestion was the source of the fatal issue, by producing apoplexy."

In the case of Dr. Coxe's patient, one powerful cause of the conversion of diseases appears to have had full sway, namely, *Medical Treatment*. The unfortunate subject came into the Doctor's hands after undergoing the sufferings of a severe disease, and of vigorous Galenical discipline, nearly three months. In that reduced condition, the Doctor, being most unluckily in the "*dark*," one time bled and purged the patient; another time gave him bark, port-wine, and laudanum; and another, inflamed him with phosphorus. Although every possible effect that this exhausting process could produce was at length obtained, and though the poor victim had lost about an hundred ounces of blood, yet, as the Doctor considered him "labouring under a *depressed* state of the system," an attempt was made to exonerate him by lessening the still oppressive burthen of blood; but alas! not more than two or three tea-spoonfuls could be extracted from his veins. And, consequently, weighed down with the dire load of an *oppressed system*, that very day the hapless patient sunk into the arms of death!"

* Medical Histories and Reflections, vol. ii. p. 31.

" Quot Themison ægros autumno occiderit uno!"

On the practical mischief which would ensue from embracing the *new theory* of Dr. Coxe, I need not particularly enlarge, as it will not be difficult for any of your readers to perceive it by impartially weighing the preceding facts and observations. But, in respect to medical science, there is a mischief to which that theory ministers, viz. the propensity to generalize without sufficient data, which requires some distinct animadversion. This propensity, under the pretence of *simplifying*, may be accused of doing harm not only to medical science in particular, but also to science in general. The immortal Verulam, to whom genuine philosophy is highly indebted, maintains this opinion: " Solent autem homines naturam," says that truly great man, " tanquam ex prælta turri, et a longe déspicere et circa *generalia* nimium occupari, quando si descendere placuirit, et ad *particularia* accedere, resque ipsas attentius et diligentius inspicere, magis *vera* et utilis fierit comprehensia. Ideoque," continues he, " dubitandum non est quin si *Medici*, missis paulisper istis *generalibus*, naturæ obviam ire vellent; compotes ejus fierent, de quo ait poeta,

" Et quoniam variant morbi, variabimus artes;
Mille mali species, mille salutis erunt."

This doctrine is enforced, in a very sensible manner, by Mr. M'Mullin, at the beginning of the paper already quoted, where he says, " Few circumstances have contributed more to retard the progress of the healing art than premature generalization. Our opinions are often derived from the consideration of insulated facts, which have accidentally made a strong impression on our minds. The partial views thus obtained, from our impatience to arrive at general principles, we immediately assume as the basis of a system which we believe to be incontrovertible; because, with unconscious partiality, we exaggerate the importance of every argument which seems to support it, and neglect or distrust every fact with which it is incompatible."

Thus, when men infer general theorems and universal propositions from a few experiments or observations, it is logically termed a *false induction;* to which sort of sophism, Dr. Coxe, on this occasion, appears to be too much addicted; and in drawing a parallel between chorea and hydrocephalus, he is no less prone to resort to fallacious argument. There we find him trying every sophism which his art of logic can furnish, such as the *petitio principii*, the *non*

causa pro causa, and the *fallacia accidentis*. Nor is he more observant of the canons of pathology than he is of the laws of reasoning. According to his pathology, chorea is merely a symptom of hydrocephalus, and yet, in his parallel, he reckons that *single symptom* similar to the *whole disease*.

The self-complacency, which Dr. Coxe discovers in conferring on his arbitrary proposition the title of "A New Theory," brings to my recollection an instance of a similar nature with respect to the structure of language. A gentleman of some talents, but little acquainted with the progress of letters, composed an English grammar which he conceived to be *perfectly new*, and as such he showed it to a friend, who was more conversant with books than he was, but who, unluckily for his hopes, convinced him that he had been anticipated by Lowth. Such a friend and confidant would have been an acquisition to Dr. Coxe. If no such person were attainable, he might have found a useful monitor in a very old writer, of unquestionable authority (provided he ever peeps into old works), who has pronounced, "The thing that hath been, it is that which shall be; and that which is done, is that which shall be done: and there is *no new thing* under the sun." This being the decision of a wise and good man, whose authority we must reverence and should not oppose, it is applied, as an *argumentum ad verecundiam*, or an address to the *modesty* of Dr. Coxe, by

Yours, &c.

WM. PATTERSON.

Londonderry, Dec. 16, 1805.